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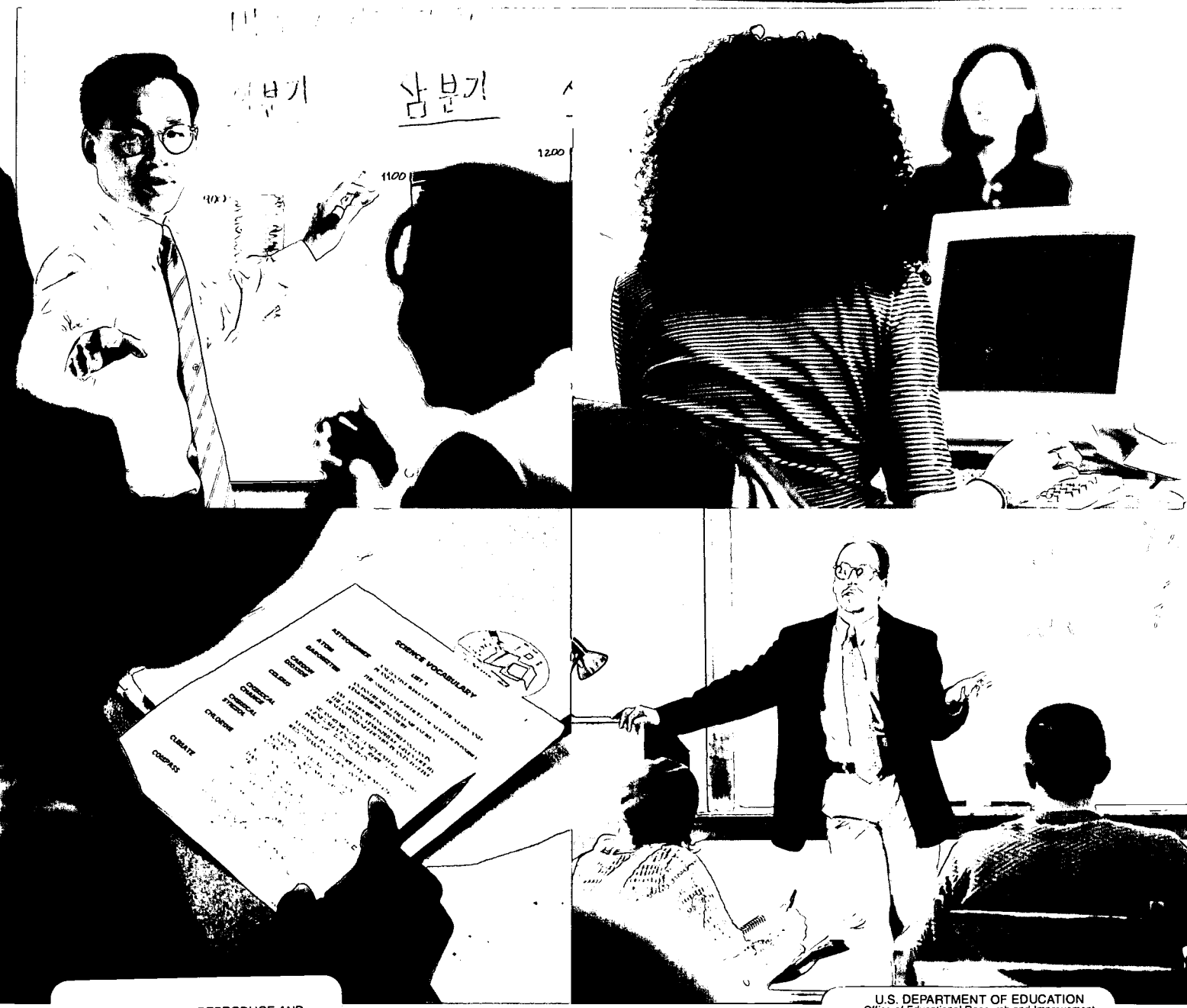
ABSTRACT

The role of adult education in sustaining economic growth and expanding opportunity in Massachusetts was explored. The analysis focused on the new basic skills needed for a new economy, groups lacking the new basic skills, the demand for adult basic education (ABE), funding for ABE, building basic skills through adult education, ABE's costs and benefits, and moving toward an integrated job training and ABE system. The following major challenges to building workers' skills were identified: (1) a language challenge; (2) an education credential challenge; and (3) a new literacy challenge. The following were among the recommendations offered for overcoming these challenges: (1) expand weekend classes; (2) track students' outcomes in the labor market after they leave the classroom; (3) expand developmental education through community college-employer partnerships; (4) expand community college developmental education; (5) create tax incentives for the private sector; (6) provide more job training for workers with the most limited skills; (7) refer workers with weak skills to ABE systems and one-stop career centers; (8) and direct ABE students toward other education and training opportunities. The following items are appended: background information on the ABE system; the education and literacy needs of Massachusetts' elderly and young adult populations; and supplemental tables. (Contains 80 tables.) (MN)

New Skills for a New Economy:

Adult Education's Key Role in Sustaining Economic Growth and Expanding Opportunity



MassINC

THE MASSACHUSETTS INSTITUTE FOR A NEW COMMONWEALTH

Lifelong Learning Initiative

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- Lifelong Learning—Building a ladder of opportunity through the continuum of learning
- Safe Neighborhoods—Creating crime-free communities for all
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Through the Lifelong Learning Initiative we work to ensure that every citizen has the tools to succeed in today's dynamic, technology-driven economy. MassINC believes in a continuum approach to learning, and that approach is reflected in the threefold emphasis of our Lifelong Learning Initiative: (1) Ensuring that the state's pre-K and K-12 Education Reform effort stays on track; (2) transforming the state's public college and university system into a powerful catalyst for economic growth; and (3) exploring innovative new ways to educate and train adult workers so that they have the skills in demand by Massachusetts employers.

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New Skills for a New Economy:

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December 2000

MassINC
THE MASSACHUSETTS INSTITUTE FOR A NEW COMMONWEALTH
Lifelong Learning Initiative

December 2000

Dear Friend:

MassINC is proud to present *New Skills for a New Economy: Adult Education's Key Role in Sustaining Economic Growth and Expanding Opportunity*. This report, made possible by the generous support of the Boston Foundation, considers how best to meet the 21st century skills challenge. The presence of a very large number of workers—more than a million—who lack the skills and/or education needed in today's economy is a long-term threat to the state's continued prosperity. The anemic growth in the size of our labor force over the past decade makes the existence of this large untapped pool of low-skilled workers all the more important. We all pay a price for every worker unable to contribute to and participate in the New Economy.

New Skills for a New Economy breaks ground in two important ways. First, we have documented the size and nature of the state's working-age population that lacks the skills needed for the New Economy. In doing so, we have argued that we must move past traditional conceptions of literacy in order to reflect the new demands of the twenty-first century. Second, we have analyzed the state's adult basic education (ABE) system, which is one of the principal places where adults with limited skills begin to build their skills. Because of the commitment of the leadership at the Adult and Community Learning Services division of the Department of Education to collecting and sharing data, MassINC was able to conduct an unprecedented quantitative analysis of the state's ABE system. Our analysis allows us to assess the state's current investment in ABE and to offer guidance about how to improve the delivery of adult basic education.

For MassINC, *New Skills for a New Economy* adds to a growing body of research motivated by our Lifelong Learning Initiative, which is based on the premise that an individual's economic success requires a continuum of learning throughout one's lifetime. Because lifelong learning and economic prosperity are closely linked, this report also builds on the collection of past MassINC research concerned with expanding economic growth and opportunity. Our 1997 report *Closing the Gap: Raising Skills to Raise Wages* took a close look at the role of job training programs, community colleges, and adult basic education. Our most recent report, *Opportunity Knocks: Training the Commonwealth's Workers for the New Economy* (2000), outlined how Massachusetts could take advantage of the new federal Workforce Investment Act (WIA) to create a more effective adult job training system.

We are extraordinarily grateful to the team of authors responsible for this report. We were fortunate to be able to assemble a team whose broad range of knowledge and expertise led to the comprehensive analysis that follows. We appreciate the commitment and long hours that John Comings, Andy Sum, Johan Uvin, and others offered to this project. We would also like to thank the many advisors and reviewers who, through their critical insights, have significantly strengthened the final report.

MassINC's mission is to inject solid, objective research into today's public policy debates, and to that end, we hope that you find *New Skills for a New Economy* a provocative and timely resource. We welcome your feedback.

Sincerely,

Tripp Jones
EXECUTIVE DIRECTOR

Dana Ansel
RESEARCH DIRECTOR

New Skills for a New Economy:

Adult Education's Key Role in Sustaining Economic Growth and Expanding Opportunity

CONTENTS

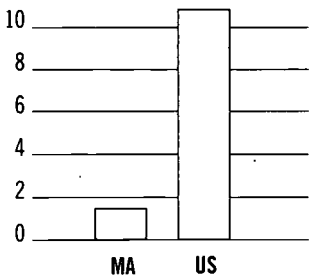
Workers today need a much broader and stronger set of skills than they did ten or twenty years ago. They must also learn new ones continually if they are to adapt and contribute to companies competing in the fierce global marketplace. The Commonwealth thus far has done exceedingly well in the new knowledge-based economy. As a state that has long built its livelihood on the brains and skills of its workers, it has been well-positioned to exploit the new opportunities.

Future Economic Growth At-Risk

There are some worrisome signs, however, that our state will not be able to sustain its current prosperity. Our workers are what fuel the state's economic engine. They are our competitive advantage. But we are experiencing shortfalls in human capital unlike anything we have seen before. According to a recent study in Massachusetts, in some fields, including information technology, one in twelve positions for skilled workers are unfilled. Increasingly, employers have had to look outside the country to find workers who can do these skilled jobs, and still critical positions are left vacant.

As MassINC's 1998 study *The Road Ahead: Emerging Threats to Workers, Families and the Massachusetts Economy* documented, the slow growth in the size of the state's labor force is a leading factor in high job-vacancy rates and poses a serious threat to sustaining a healthy economy. Labor shortages in critical occupations are likely to stifle future growth and erode the state's competitive edge. The growth of the labor force in the New England region has lagged far behind the rest of the nation. Over the last decade, the national labor force grew by nearly 11 percent. During that same time period, the labor force in Massachusetts grew by only 1½ percent, the fourth-lowest rate in the nation and a far cry from the state's double-digit growth rates of the 1970s and 1980s. The consequence of this trend is clear: the state's current economic boom simply cannot be sustained without more workers, and especially, skilled workers.

Labor Force Growth in the 1990s
(Number in percent)



During these good economic times, the state is not doing enough to create an adult education and training pipeline that gives workers the skills that our economy requires. MassINC's most recent report, *Opportunity Knocks: Training the Commonwealth's Workers for the New Economy*, argued that "Massachusetts's weak suit —compared to other states and to our own needs— is providing skill-building opportunities for adults, especially lower-middle-class and working-class adults." Every day we become more aware of just how true this is. In our state, there are no workers to waste. A workforce with insufficient skills is as big a threat as the persistent outmigration of workers to other states.

Those with Limited Skills Falling Further Behind

At the same time that jobs are going unfilled, a substantial number of workers remain an untapped resource because of their limited ability to participate in the New Economy. People who don't speak English, adults without a high school diploma, and those who may have a high school diploma or even some college education but have limited skills all have few options in today's labor market. They are often working harder and harder just to keep pace financially. Increasingly, they are stuck in low-wage jobs, falling further behind with little chance to share in the state's prosperity.

Leads to Continued Growth of the Gap between the "Haves" and "Have-nots"

To sum up, this phenomenon hurts all of us. What used to be viewed as an individual's problem is better understood as a public problem, with major economic and social consequences. Having a large number of workers with weak skills threatens the state's economic prosperity; a workforce with strong skills is the cornerstone of a healthy economy. The widening gap between the haves and have-nots also erodes the state's middle class. A healthy and growing middle class is the foundation of a healthy Commonwealth. Yet, inequality has been growing in the Commonwealth. If Massachusetts continues this course, we can expect a host of social, political, and economic problems.

This report puts forward a long-term vision to help sustain our state's economic prosperity by focusing on those workers with the weakest skills. *New Skills for a New Economy: Adult Education's Key Role in Sustaining Economic Growth and Expanding Opportunity* builds on previous MassINC research in which we have argued for an integrated adult education and training system. In *Closing the Gap: Raising Skills to Raise Wages* (1997), we offered a vision of "lifelong learning" that stretches from pre-K education all the way through higher education and includes adult education and job training. *Closing the Gap* raised as many questions

as it answered, and this report continues to examine the nature of the state's current skills problem. For instance, in *Closing the Gap,* we relied on the Massachusetts Department of Education's estimate of the population in need of ABE instruction, which was the best estimate available at the time. This report offers a fresh analysis of the size of the adult population not sufficiently educated or trained for the New Economy.[1] *New Skills for a New Economy* continues the task of understanding the twenty-first century skills problem by asking the following four questions:

1) How many adult residents of Massachusetts lack the new basic skills?
2) How well does the ABE system work?
3) How do we best serve those who are not candidates for traditional ABE instruction but who need their skills upgraded in order to succeed in the New Economy?
4) How well integrated is ABE with other efforts to upgrade workers' skills?

This report emphasizes the specific role of adult education in expanding the skilled workforce and raising the incomes of workers, but the need for strong basic skills goes beyond the workplace. By building the skills and knowledge base of its students, adult education contributes to society in other ways. It helps adults in their roles as parents, citizens, and members of communities who must negotiate an ever-more-complicated world. Some students gain skills that allow them to help their children with their school work or to become more effective advocates for their communities. The benefits that come from this investment will be both social and economic. Research suggests that children will do better in school, communities will have more active members, and the Commonwealth will have a more informed electorate.

1 Several years ago the Mass. Department of Education estimated that 877,000 adults were in need of adult basic education instruction. This figure was publicized by MassINC in *Closing the Gap*. The DOE estimate and the estimate presented in this report are calculated in different ways. Readers are cautioned against comparing the two estimates and making an "apples to oranges" comparison. The DOE estimate includes all adults in Massachusetts who have skills in the lowest literacy level of the National Adult Literacy Survey (NALS Level 1). In this report, we only consider working-age adults (16-64 years old), and we include people who have skills in the lowest two levels of the National Adult Literacy Survey (NALS Level 1 and Level 2). In addition, the DOE estimate of 877,000 was based solely on the NALS survey. In this report, we include members of two other categories, because research on labor-market outcomes suggests they too are not sufficiently prepared for the New Economy. These categories include immigrants who have limited English speaking skills and people who lack a high school diploma or GED. In sum, this new estimate provides a much more detailed, reliable, and thorough representation of the size and nature of the twenty-first century skills problem.

What do we mean when we say...?

Adult Education refers to a range of classes that build the skills of adults. It includes ABE (see below), developmental education, and other training courses that focus on building basic skills. (**Job training** refers to a narrower set of job-specific or technical skills.)

Adult Basic Education (ABE) or **ABE system** refers specifically to classes in basic literacy, GED (high school credential), and English for Speakers of Other Languages (ESOL) that are administered by the Massachusetts Department of Education.

Developmental Education refers to classes offered by community colleges in collaboration with companies to upgrade workers' skills. Although developmental education can also be used to describe college preparatory courses, that is not the focus of this report. The developmental education to which we refer is focused on skill-building, and the intention is to help workers gain skills, not to help students gain the skills necessary to enroll at community colleges.

New Basic Skills is a term coined by Professors Richard Murnane and Frank Levy and refers to the set of skills needed in today's economy. Today, to secure a middle-class job, workers must be able to solve complex problems, think critically, communicate effectively, and use computers and other technology. Drawing on their research and other labor market research, this report finds that adults today need to speak English, have a high school credential, and have a set of literacy skills equivalent to NALS Level 3 or higher. Each of the challenges listed below addresses one of these three specific requirements.

NALS refers to the 1992 National Adult Literacy Survey. Respondents were placed into one of five levels, with Level 1 representing the weakest skills and Level 5 the strongest skills. A wide range of experts, including the National Governors' Association, agree that today's economy and society require skills at Level 3 or higher. This concept of literacy measures adults' skills across a wide array of tasks that reflect the reality of the demands of today's workplace and society.

NALS Level 3 In concrete terms, adults who do not perform at Level 3 are unlikely to be able to consistently handle tasks such as planning travel arrangements for a meeting using a flight schedule. They are unlikely to be able to be able to read a news article and identify a sentence that provides the interpretation of the topic addressed. They are unlikely to be able to identify multiple pieces of information from a bar graph.

The Language Challenge refers to immigrants with limited English speaking skills.

The Education Credential Challenge refers to adults who lack a high school diploma or GED.

The New Literacy Challenge refers to low-skilled workers who have a high school credential. These workers have skills equivalent to NALS Level 1 or Level 2—the lowest two levels. These people may not be illiterate in the traditional sense, but they have limited reading, math, and analytical skills that restrict their ability to participate in the New Economy.

How Many Adult Residents of Massachusetts Lack the Basic Skills Needed in the New Economy?

The New Basic Skills

What does being literate for the New Economy mean? At one time, mastering a set of mechanical skills could ensure a lifetime of good employment. That possibility is increasingly unrealistic in a world defined by complexity, competitiveness, and market change. In the twenty-first century, strong basic skills are essential to be able to participate in a world governed by complex information and communication technology. A single set of technical skills is no longer sufficient.

In their book *Teaching the New Basic Skills*, Richard Murnane and Frank Levy (professors at Harvard University and MIT, respectively) compile a list of what are now considered "basic skills" based on their research into highly productive businesses. Though literacy and math are still the core basic skills, they are no longer sufficient. Today, to secure a middle-class job, workers must be able to solve complex problems, think critically, communicate effectively, and use computers and other technology. Workers now need solid literacy and math skills just to get their foot in the door of today's workplace, and over the next few decades, the expectations will only increase.

The Scope of the Problem: Three Challenges

Guided by research on the demands of today's labor market, we identify three distinct challenges to building workers' skills:

- a Language Challenge
- an Education Credential Challenge
- a New Literacy Challenge

While many people face more than one of these challenges, we focus on each separately in the order that they are logically approached.

Challenge #1

A Language Challenge: Immigrants with Limited English Speaking Skills

Immigrants have accounted for all of the net growth in the state's labor force over the last ten years and are a rapidly growing segment of the population. More than a quarter of a million new immigrants have arrived in Massachusetts since 1990. These new residents offer a great opportunity to expand our labor force, and in fact, other states are waging active campaigns to attract new immigrants to their states for precisely this reason. However, many immigrants do not speak English well, and this is a minimum requirement for many of today's fast-growing professional, managerial, and sales positions. Consequently, some immigrants are faring poorly in the labor market. Immigrants with limited English speaking skills earn 24 percent less than their employed counterparts who are fluent in English. In Massachusetts, 195,000 working-age immigrants—six percent of the state's workforce—have limited English speaking skills, and this estimate, based on the 1990 Census, is almost certainly higher today.

Worse yet, many immigrants face the dual problems of weak English speaking skills and limited formal schooling. More than half of the 195,000 immigrants with limited English speaking skills also lack a high school credential. In fact, immigrants in Massachusetts are nearly four times as likely as native-born workers to lack a high school diploma. Both of these challenges are important to address. In order to meet the educational challenge, however, we must first help these immigrants learn to speak English.

Challenge #2

An Education Credential Challenge: High School Dropouts

High school dropouts pay a steep economic price for not obtaining a high school credential. No other demographic group has been more heavily penalized in the New Economy for a lack of a credential. Their rate of employment has declined, and when they are employed, the real value of their wages has also declined. In fact, in the 1990s, families headed by someone with a high school diploma earned almost fifty percent more than families headed by a high school dropout. Moreover, high school dropouts are extremely vulnerable to future changes in the labor market. As noted above, immigrants are much more likely than native-born adults to lack a high school credential. To avoid duplication in our overall count, we exclude those immigrants with limited English speaking skills who also lack a high school credential. After excluding the overlap, we find there are 280,000 working-age high school dropouts in Massachusetts. That almost nine percent of the workforce lacks a high school credential is cause for grave concern, especially in a state that prides itself on a highly educated population and labor force.

The Three Challenges

195,000
Immigrants with Limited English Speaking Skills

280,000
High School Dropouts

667,000
Workers who have a high school credential but have limited skills

Challenge #3

A New Literacy Challenge: Low-Skilled Workers Who Have a High School Diploma

In 1992, the National Adult Literacy Survey (NALS) measured the literacy skills of the adult population in the country. People who scored in the lowest two levels (Level 1 and Level 2) may not be illiterate in the traditional sense but, rather, have limited reading, math, and analytical skills that restrict their ability to participate in the New Economy. Experts across the board, including the National Governors' Association, agree that today's economy and society require skills at Level 3 or higher. This new definition of "literacy" measures adults' skills across a wide array of tasks that reflect the reality of the demands of the twenty-first century.

In concrete terms, adults who do not perform at Level 3 are unlikely to be able to consistently handle tasks such as planning travel arrangements for a meeting using a flight schedule. They are unlikely to be able to read a news article and identify a sentence that provides the interpretation of the topic addressed. They are unlikely to be able to identify multiple pieces of information from a bar graph.

A major finding of this report is that a surprisingly high number of people active in the state's labor force have a high school credential but still have skills in the lowest two levels of NALS, meaning they are not fully literate according to the new definition of literacy. Separate and distinct from the two groups cited previously (immigrants with limited English speaking skills and high school dropouts), we identified another 667,000 workers who despite having a high school credential are still not adequately trained or educated for the twenty-first century economy. These workers account for almost twenty-one percent of the workforce.

Two phenomena explain how so many workers with a high school credential have weak literacy skills. First, some of these workers never achieved the desired proficiency of a high school graduate, although they have a credential. The state's K-12 Education Reform efforts are poised to end this practice for future generations, but this should not distract from the bigger issue. Today's skill requirements are substantially different from those of the past. Today's economy demands a higher level of skills, more complex than the sort high school graduates were taught in previous years. While the future workforce should be adequately prepared, we have more than half a million workers in the workforce today who need their skills upgraded for the twenty-first century.

1 in 3 Workers Not Adequately Prepared for the New Economy

In different ways, members of each of these three groups are not prepared for today's economy. When we calculate an unduplicated count of workers who are not adequately trained or educated for the New Economy, we arrive at 1.1 million adults.[2] They constitute 35 percent of the state's labor force of 3.2 million workers. In other words, we believe that about 1 in 3 workers in Massachusetts are not adequately prepared for the New Economy.

Despite the enormity of the problem, we must resist the temptation to say that it is too big to address in a meaningful way. Instead, we must focus on what we can do to make a difference—and there are things we can do. Really, we don't have a choice. The families who are working harder and harder just to keep pace financially need help upgrading their skills. And the future economic health of our state depends on our ability to improve the skills of our workers.

Thousands of Workers Willing to Take Responsibility for Improving their Skills

There is some good news that comes with these three challenges. Thousands of workers in the state want to improve their skills. Each year, tens of thousands of adults who want to improve their basic skills and who want to learn how to speak English come to the doors

2 Our estimate is based on three sources of data. The estimate of the Language Challenge is based on the 1990 U.S. Census; the Education Credential Challenge estimate is based on the Current Population Surveys; and the New Literacy Challenge estimate is based on the National Adult Literacy Survey combined with the Current Population Surveys to get a state estimate.

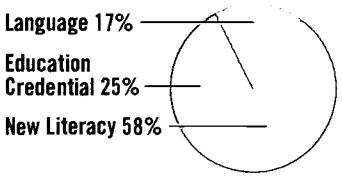
Estimated Universe of Need[1] for Adult Education, 1998-99

Group in Need	Number
Language Challenge	
Immigrants with limited English-speaking skills	195,000
Education Credential Challenge	
Adults lacking a high school diploma or GED	280,000
New Literacy Challenge	
Full-time employed[2] with a Level 1 or 2 proficiency	509,000
Part-time employed[2] with a Level 1 or 2 proficiency	126,000
Unemployed[2] with Level 1 or 2 proficiency	32,000
Subtotal	667,000
Total	1,142,000

Note: (1) Counts exclude 16-24 year old students in high school and college and all persons 65 and older.
(2) Counts exclude persons lacking a high school diploma or a GED certificate.

1.1 Million Workers Not Prepared For the New Economy

What is the Breakdown of the Problem?



of ABE and other adult education programs for help. The actions of such workers demonstrate their willingness to take responsibility for improving their skills. Their commitment to helping themselves will help the state as well as their own families, and the state must do more to respond. In the report that follows, we identify priorities and points of entry that offer the biggest potential payoffs.

Need for Lifelong Learning

As we focus our efforts to tackle the twenty-first-century skills challenge, it is important that we think in terms of the need for lifelong learning. Lifelong learning is the expectation of continuous revising and upgrading of skills throughout a person's life to keep pace with a changing economy. Lifelong learning is particularly important for workers with weaker skills, who traditionally have not had access to professional development and training.

There is clearly a wide literacy gap between the highest skilled workers and those with the most limited skills. We cannot kid ourselves by believing that the workers who lack basic skills are one class away from solving the labor shortage. The reality is it may take many classes to get them well-positioned for the New Economy. There are no easy answers. The solution we advocate—a serious, integrated adult education and training system—presents the best opportunity for sustaining our state's economic prosperity and making certain the prosperity is broadly shared.

Meeting the Three Challenges

How to Meet the Language Challenge and the Education Credential Challenge: The Demand for and Role of Adult Basic Education

We have identified three distinct challenges in building people's skills. We first discuss how to meet the Language and Education Credential Challenges and then turn our attention to the New Literacy Challenge. The adult basic education system, operated under the state's Department of Education, is one of the principal places where adults with limited skills begin to build their skills. Currently, ABE is geared toward helping immigrants learn to speak English and helping students gain basic literacy skills. The most advanced classes in the literacy sequence are GED classes, and these classes prepare students to earn high school credentials. Thus, the ABE system has limited opportunities for students who have a high school credential but still need their basic skills upgraded—this is the New Literacy Challenge. Rather than create a new sequence of classes within the ABE system, which is what would be necessary to systematically address the New Literacy Challenge through the ABE system, we believe ABE should focus on meeting the Language and Education Credential Challenges.

The Massachusetts Legislature has demonstrated a serious commitment to building an adult basic education system by substantially increasing funding every year for the last six years. Since 1994, the amount of money the Commonwealth has allocated to adult basic education has increased more than sevenfold from $4.1 to $30.2 million. In Fiscal Year 2000, the total cost of ABE was $40.9 million, and the state provided three-quarters of this money. Great benefits have come from this investment. Indeed, the number

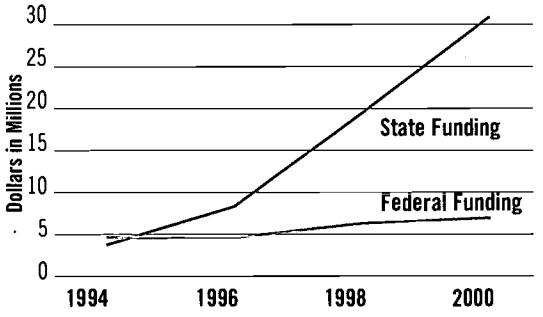
Meeting the Three Challenges

Challenge	Population in Need	Current Situation	Recommendation
Language Challenge	195,000	Currently served by DOE ABE classes (25,000 students served)	Expand, improve, hold accountable (see chapter 8)
Education Credential Challenge	280,000		
New Literacy Challenge	667,000	Not being served by a coherent system. Addressed through community colleges, ABE, workplace education, job training. (No idea how many people served)	Expand developmental education through community college—employer partnerships. (see chapter 8)

of students taught by the ABE system has increased from 14,557 to 24,581, and the quality of instruction has also improved significantly.[3]

Through its ESOL and literacy classes, the ABE system is prepared to meet the Language and Education Credential Challenges. It is important not to diminish the size of the challenge facing the ABE system or the vital importance of the basic literacy, GED, and ESOL classes being provided. The combined total of 195,000 immigrant workers who have limited English speaking abilities and the 280,000 workers lacking a high school diploma adds up to almost half a million workers (475,000). There is, of course, room for improvement in the delivery of ABE instruction, and our research provides some guidance about how to accomplish this.

State and Federal Funding for ABE



Only a Tiny Fraction of the Population in Need Attend ABE Classes

Despite all of these efforts, a tremendous amount of work remains. First, only a tiny fraction of the workers who need to upgrade their basic skills receive instruction. In the year 2000, approximately 25,000 students will attend ABE classes.[4] Thus, the ABE system currently reaches less than six percent of the 475,000 adults whose skills deficits could be addressed through ABE classes. At the same time, thousands of adults are on waiting lists for ABE classes.

Waiting Lists for ABE Classes Have Not Disappeared Despite Substantial Increases in the Number of Seats

Second, because of limited capacity, the adult basic education system does virtually no outreach to potential students. Even without outreach, students show up for a chance to improve their basic skills. Not everyone can be offered that chance, though, because there are not enough slots. Many students are placed on waiting lists. For instance, 224 students are waiting for classes at the Framingham Adult ESOL program. In fact, sometimes more students are waiting than are learning in a program. At the Boston Chinatown Neighborhood Center, the waiting list is almost twice as long as the enrollment list. The number of students on waiting lists statewide varies throughout the year. In recent years, the numbers have ranged from 8,000 to 16,000. The greatest demand is for ESOL classes, and more than half of those who wait seek these classes. The wait is longest in large urban areas, and students can wait more than a year for ESOL classes. The stumbling block here is clearly the lack of available classes, not the lack of interest.

Sadly, we do not really know how many adults want to upgrade their skills and would participate in classes if given the opportunity. In the 1990s, the state's landmark Education Reform Act (ERA), best known for setting new guidelines for the state's K-12 system, also established the Adult Education Committee, chaired by Jerome Grossman, to look at the state of adult basic education. Its final report, which has come to be known as the *Grossman Report*, offered a plan to eliminate the waiting lists. The Legislature was quite responsive to its recommendations. Each year, the state has devoted more resources to adult basic education specifically so that people who want to learn basic skills do not have to wait. Yet seven years later, despite substantial increases in the number of classroom seats, waiting lists have not disappeared. Rather, they have remained at roughly the same length. More people keep coming for a chance to learn, and this is happening without advertising or active outreach efforts.

As people learn about opportunities, they want to improve their skills. Tens of thousands of people in the state are not looking for a handout; they are looking for a hand up. Despite the economy's need for more skilled workers, despite people's desire to help themselves, the state is not fully able to respond. This is especially a problem for immigrants who want to learn to speak English.

We believe that the Legislature should expand funding for adult basic education until everyone who wants help improving his or her basic skills, learning to speak English, or studying for the GED test can get it within a few weeks. The explicit objective of future appropriations increases should be the elimination of all waiting lists by the Fiscal Year 2003 (June 30, 2002). If a person is willing to come to class and put in the work necessary to upgrade his or her skills, then Massachusetts should become a state that makes cer-

3 In addition to ABE funding, there are other sources of public funds that support building workers' basic skills. For instance, some of the training programs under the federal Workforce Investment Act (formerly "JTPA") support basic skills education. In addition, this year the Legislature provided $2.1 million to expand the "developmental education" provided by community colleges. Moreover, a modest fraction of the $18 million contributed annually by employers to the state's Workforce Training Fund is spent on basic skills education.

4 Basic skills are also taught through programs outside the ABE system. However, there is currently no way to identify the total number of participants in all the different programs that provide some form of basic skills instruction. The overall number is higher than 25,000, and it still falls significantly short of the need. For instance, in 1998, of the approximately 13,000 adults who enrolled in JTPA job training programs, 61 percent lacked ninth grade math skills, yet fewer than 15 percent received basic skills instruction.

tain there is a seat available for that person and that the classes deliver effective instruction.

What Does the State Buy with Its Investment in ABE? How to Improve the Effectiveness of Adult Basic Education

The Department of Education's ABE system educates a tiny fraction of the total number of workers whose skills need to be upgraded. Before increasing the system's capacity, we should assess what return the state gets from its investment in ABE by asking: Does participation in adult basic education programs lead to positive outcomes?

For the first time in the history of ABE in Massachusetts, we are able to conduct a comprehensive quantitative analysis of student outcomes. We are able to do this because of recent improvements in data collection and the willingness of the leadership of the Department of Education to share its data with interested parties for objective analyses. Our analysis allows us to determine whether the money the state spends makes a difference in our ability to teach adults basic skills and help them acquire educational credentials. It also offers guidance about how to improve the delivery of ABE.

Students Learn in ABE Classes

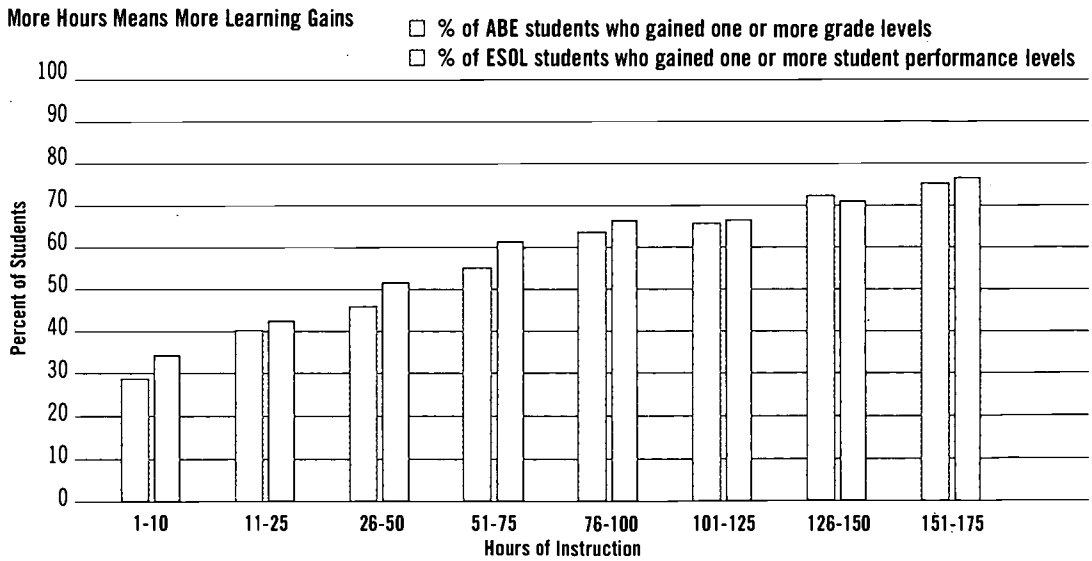
We find adult basic education to be effective in improving students' literacy skills, but there is also room for considerable improvement. Although student motivation and the efforts that they put forth are the key to success, there are specific steps the Department of Education can take to improve the delivery of ABE instruction. We find that more than half the students achieve learning gains, and almost one-third gain more than two grade levels (or student performance levels in the case of ESOL students). As students receive more hours of instruction, more of them achieve learning gains. The longer students stay, the better they do. Thus, we need to focus on getting students to class and getting them to stay longer. Our research suggests that we should aim to keep students in class for 150 hours per year.

Too Many Students Leave ABE Classes Too Soon

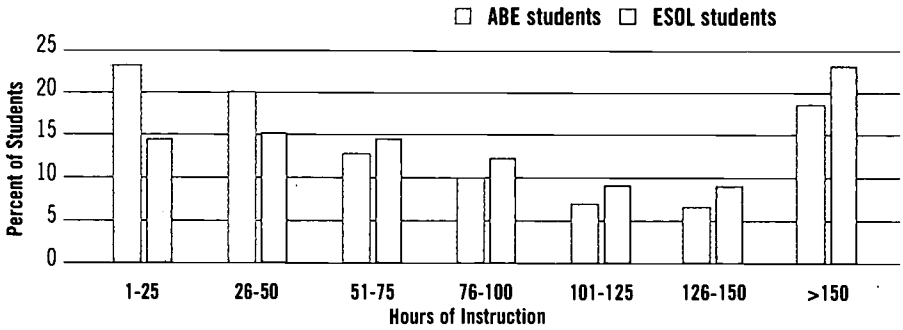
As students spend more hours in class, they are likely to learn more. Many students, however, only attend classes for a short time. Almost one in five students drop out after a month—approximately 25 hours of instruction. At a few hours per week, a month is not long enough for most students to achieve any substantive learning gains. On this score, ESOL students do better because they tend to stay in class for a longer period of time. We should redouble our efforts on finding ways to retain students, especially in literacy classes. Currently, only 21 percent of students receive at least 150 hours of instruction. The Department should set a goal that 33 percent of all students receive a minimum of 150 hours of instruction.

Intensity of Instruction Matters for Students Trying to Earn a High School Credential

For those students trying to earn a high school credential, we also find that how we teach students matters. We examined intensity of instruction, defined as the number of planned class hours per week, in GED and pre-GED classes. For this specific group of students,

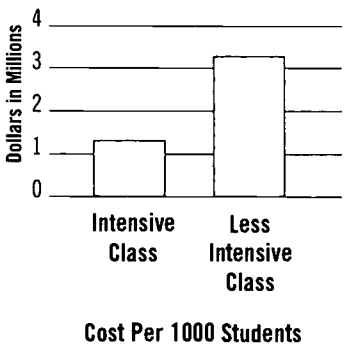


Too Many Students Drop Out Before 150 Hours



we find that fewer overall hours, if offered intensively, can actually be more effective than more hours spread over a longer period of time. We also find that for the same number of hours, a student is always better off if the class is taught intensively. Intensity might also be an effective recruiting tool. The class might be thought of like a SAT review course that helps prepare students to take an exam. The intensive class period will be difficult for students balancing many responsibilities, and ABE funders and programs will need to be creative about finding ways that help students attend such classes. Nonetheless, intensive classes with a specific endpoint are likely to appeal to many students.

Intensive Classes Will Cost Less



Cost Per 1000 Students

Our research suggests that the effort to offer intensive classes and recruit students for them would be worthwhile. Consider that a student who receives a total of 100 hours of instruction at 12 hours per week has the same probability of earning a high school credential as a student who receives a total of 225 hours of instruction at 6 hours per week. (In both these cases, about one in three students are expected to earn a credential). The intensive class will take about two months of instruction—the length of a summer school semester—compared to the less-intensive class that will take about nine months—the length of an entire academic year. Furthermore, given that the average student receives about 100 hours of instruction, it isn't likely that the student in the less-intensive class will stay in class for the full 225 hours in order to get the same benefit as the first student.

Potential Cost Savings

For this subset of students who are likely to benefit from intensive classes, intensive instruction will also cost the state less money, because intensive classes require fewer overall hours for the student. In 1999, the average cost in state money per student-hour was $14.69. An intensive 100-hour class would cost $1,469 per student. In contrast, the less intensive way, which is more similar to how we currently teach GED classes, would cost $3,300 per student. While there are certain fixed costs that would not be affected by fewer overall hours, it nonetheless appears that intensive classes for this subset of students appear to be both a very smart investment and a better way to address the Education Credential Challenge.

It is important to note that MassINC research only looks at the probability of earning a high school credential. It does not consider what learning gains students achieve in these classes or what test scores students earn on the GED exam. We agree with others who claim that there are no quick, painless shortcuts to genuine skill-building. But we also know that having a high school credential has important implications in the labor market. Thus, helping high school dropouts earn this critical credential through intensive GED classes has the potential to boost incomes for thousands of working families—a distinct benefit in its own right.

Expand Weekend Classes

Classes should be more convenient for students. In 1999, a total of 6,959 students indicated that Saturday classes would be convenient for them. Yet out of the approximately 1,500 classes, only 25 are offered on Saturday. Across the state, 3,832 ESOL students indicated a preference for Saturday classes. Those ESOL students who live in southeastern Massachusetts are out of luck, since at the time of this research there is not a single ESOL class in that region on Saturday - all the more disturbing for the large immigrant communities in New Bedford and Fall River. The number of classes offered on Saturday should be increased, and students across all regions of the state should be able to take ABE classes on Saturday. In addition, some programs should offer classes on Sunday to see if Sunday would also be convenient for students.

Track Students' Outcomes in the Labor Market after They Leave the Classroom

Finally, it is critical to acknowledge that one of the best ways to assess the value of our investment is not currently used in Massachusetts. Precious little information is collected by providers and state agencies about what happens to students once they leave the classroom. We know that of the participants in ABE programs who were looking for work, 18.2 percent, or

893 people, found a job during Fiscal Year 1998, but we don't know anything about the quality or wages of the jobs. We also do not know how these students will fare in the labor market over the next five years.

We cannot answer these critical questions in part because the state currently does not require different state agencies to share relevant information. This problem is more the result of a lack of political will than any true technical barriers to gathering such information. It would require collecting the social security numbers of participants and then requiring the Department of Revenue and other agencies that track labor market participation to share their data on the employment and earnings of these students. This raises some privacy issues, but we believe that these issues can be addressed with proper safeguards.

Meeting the New Literacy Challenge: Expand Developmental Education through Community College-Employer Partnerships

We have suggested that the ABE system focus on meeting the Language and Education Credential Challenges by expanding and improving existing programs. What, then, should be done for the 667,000 workers who have a high school credential but still lack the necessary basic skills—the New Literacy Challenge? While these workers might benefit from a GED class, it is not practical on a large scale to direct workers with a high school credential to such classes, because they already have a high school equivalency. Currently, there is no coherent system in place to address the New Literacy Challenge, and this group of workers is estimated to represent 21 percent of the total labor force.

On their own initiative, workers may seek out help from existing job training programs, community colleges, ABE programs, churches, or other community groups. Through workplace education programs, employers sometimes offer basic skills instruction to their employees. Unfortunately, we have no way of knowing how many workers with high school credentials (or even without credentials) receive help in upgrading their basic skills. National research indicates that only a very small fraction of firms provide such training to their front-line workers. We do know that meeting the New Literacy Challenge requires a systematic strategy and coherent policy.

To address this challenge through the current ABE system would require the creation of a new sequence of classes. But we don't believe this is necessary or wise because a set of institutions already exists that is well-positioned to undertake this challenge: the state's public community college system. We believe that a new system of partnerships between our fifteen community colleges and local employers offers the best opportunity to meet the New Literacy Challenge for the 667,000 workers in question.

Currently, community colleges offer what is called "developmental education" instruction. Although developmental education is primarily understood as college preparatory education, it is more than that. Community colleges offer developmental education instruction in collaboration with companies to upgrade workers' skills at no cost to the worker. (See the workplace-education section below.) These classes are typically located at the workplace and are privately funded by businesses. In addition to paying for the courses, employers are critically important in identifying workers who are unlikely to perceive themselves as needing help or who are not likely to know how or where to get the right type of help. The employers provide a vitally important bridge between the workers and the adult education classes.

The geographical distribution of community colleges enables them to reach companies and individuals across the state, and they have existing physical infrastructures and personnel resources that eliminate the need to start from scratch. Because they are doing this type of work already (although on a smaller scale) and are also often ABE providers, they already have some expertise in this area and have existing relationships with employers. The community colleges are not doing enough, though, and their willingness to engage in this type of work is uneven across campuses. Stronger leadership is required. Rather than being tangential to the mission of community colleges, we believe that developmental education for workers who need to upgrade their skills (and not necessarily with the goal of attaining a higher education degree) should be explicitly incorporated into the mission of community colleges.

Expand Community College Developmental Education

Developmental education should be expanded. Expanding developmental education through aggressive outreach and marketing offers the most promising way to meet the New Literacy Challenge. We believe this should be done through public-private partnerships that builds on two recent improvements. Over

the long run, it should also be considered whether it is appropriate for the workers who benefit from these programs to bear some of the costs. In July, 2000, the Legislature established two new programs. It appropriated $2.9 million to establish and implement a new Community College Developmental Educational Program, and it appropriated another $2.1 million for a new Community College Workforce Training Incentive Program. These programs provide a strong incentive for community colleges to expand their developmental education programs.

Create Tax Incentives for the Private Sector

To encourage companies to participate in these efforts and help share the cost, the state should also establish a Basic Skills Training Tax Credit. Adopting this legislation would encourage companies to invest in their workforces and ultimately enhance the competitiveness of the Massachusetts economy.

How Companies Gain from Investing in Upgrading Workers' Skills

Employers have long recognized that many of their workers need better skills. Because of this, there has been a growing interest in workplace education. The idea of workplace education is simple: basic skills classes offered through the workplace within the workplace context. This simple idea has caught on. It suits employers by helping improve the basic skills of their workers, and research suggests that there is a substantial productivity payoff to workplace literacy programs. Labor unions enthusiastically support the efforts. Workplace education also helps workers by teaching them basic skills that often translate into concrete opportunities to advance in their jobs.

Workplace Education Programs Help Workers

Classes at the workplace are more convenient for working participants. They put less pressure on a worker's schedule. Moreover, employers that receive state funding must offer at least half of the class time as an in-kind benefit to employees, which means workers can spend more time learning. A recent evaluation found that almost all participants in workplace programs are satisfied with their programs, and many are interested in taking more courses. Moreover, many participants reported benefits such as increased responsibility or a pay raise as a consequence of their participation.

Employers See the Value of Workplace Education Programs

Employers who have invested in strengthening their workers' skills recognize the benefits. In addition to increased productivity and profits, they credit the programs with improving the quality of work, increasing morale, and leading to better team performance. Often for the first time, workers speak a common language and can work better as a team. Perhaps not surprisingly, the employers with whom we spoke were enthusiastic proponents. In fact, one local employer credits the company's survival and prosperity to the investment in upgrading its workers' skills.

We see workplace education as particularly important in meeting the New Literacy Challenge. Because almost all of 667,000 adults we identified as low-skilled are already working, we believe they would be most effectively identified and instructed through encouragement from their employers. Outreach to these workers is necessary, because many of those who might benefit are unlikely to realize their skills are not up to par, and even if they do, they are not likely to know how or where to get the right type of help to upgrade their skills. Developmental education taught through community colleges in a partnership with companies offers a great opportunity to address the New Literacy Challenge.

Toward an Integrated System of Adult Basic Education and Job Training

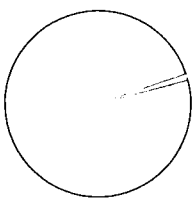
This report emphasizes that adult basic education should not be seen as an end in itself but as part of a lifelong learning process. ABE is effective for many students, but it should be seen as the first step toward other training and educational opportunities. The community colleges, Workforce Investment Boards, Corporation for Business, Work, and Learning, Department of Employment and Training, Department of Transitional Assistance, Department of Labor and Workforce Development, and the Board of Higher Education should all be more closely integrated with the adult basic education system. Currently, however, job training and adult basic education are run separately and are governed by different agencies with little institutional linkage between them, even though these agencies serve essentially the same population.

Workers with Most Limited Skills the Least Likely to Receive Job Training

Not all eligible people who come for job training actually receive training and education services. This occurs primarily because of limited funding. However, when we look at who receives help and what type of help they receive, a troubling pattern emerges. Workers who have the weakest skills are the most likely to be screened out and not receive actual training or education services. At this time, we do not have enough information to know why this is the case, but it is cause for concern. Although 61 percent of workers who enrolled in programs through the Job Training Partnership Act in 1998 had skills below the ninth-grade level, fewer than 15 percent of them received basic skills instruction, and they are rarely referred to a system that could help them—the adult basic education system.

Even if they do receive services, participants who do not have ninth- or tenth- grade proficiencies are less likely than workers with stronger skills to receive occupational training or on-the-job training. These two types of training are the most desirable in that they lead to better outcomes in terms of higher wages and higher rates of employment than other types of training services. The training system works the best for those workers with the strongest skills and makes fewer provisions to help those workers with the weakest skills.

One-Stop Career Centers Refer Few Students to ABE System

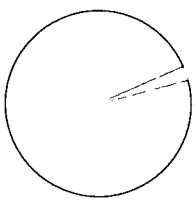


1% of students refered to ABE system by one-stop Career Centers

Workers with Weak Skills Rarely Referred to ABE System by One-Stop Career Centers

People who come for job training with weak reading and math skills should automatically be offered or referred to basic skills classes. According to the Department of Education, in 1999 only 314 out of 25,000 students (1 percent) were referred to the ABE system by the state's one-stop Career Centers. This number likely underestimates the number of referrals because it is based only on the information provided by students at the time of their intake, but it should not distract from the genuine problem of a lack of coordination between the agencies.

Few ABE Students Plan to Take Further Education or Training



2% of students who complete ABE classes plan to go on to further education or training

ABE Students Rarely Directed toward Other Education and Training Opportunities

At the same time, the adult basic education system must also be better integrated with existing job training programs. Upon completion of basic skills classes, participants should be pointed toward job development, job placement activities, and other forms of training that are likely to lead to higher wages. And yet, upon completing their ABE classes, only 557 of ABE students (2.38 percent) cited that they planned to take further education or training courses. Basic skills classes are effective in improving basic literacy and numeracy skills, but they are only the first step in upgrading adults' skills. Basic skills instruction, job training, and increased educational opportunities are the key to providing the skilled workers that the state's economy demands, while at the same time improving the wage and earning prospects for less-skilled workers.

Concluding Thoughts

We have identified 1.1 million workers in the Commonwealth who are not adequately prepared for the New Economy. That is 1 in 3 of our workers. These workers face one of three distinct challenges to upgrading their skills: a Language Challenge, an Education Credential Challenge, and a New Literacy Challenge. Through its ESOL, literacy, and GED classes, the ABE system is prepared to meet the Language and Education Credential Challenges. It does, however, need to be expanded and improved. More significantly, there is currently no coherent system to meet the New Literacy Challenge for 667,000 of the 1.1 million adults. These workers have a high school credential but do not have the skills needed for today's economy. To address this need, we suggest expanding developmental education through community college-employer partnerships. By allowing the ABE system and the community colleges each to do what they do best, hundreds of thousands of workers who want to take responsibility for upgrading their skills will have that opportunity.

If workers are willing to put in the necessary work, they will not only help themselves and their families, they will also contribute to the Commonwealth's economic prosperity. The Commonwealth does not have the luxury of deciding whether to accept the challenge of preparing its workers for the twenty-first century. The long-term economic health of our state depends on our willingness to invest wisely in a stronger and more fully integrated adult education initiative. At the same time, we need to hold the ABE system and the community colleges accountable for the outcomes of the students they teach. We must track what happens to the students who participate in these programs. Finally, as a state that lives by its wits, we must also continually encourage innovative thinking about how best to upgrade the skills of our workforce.

✓Over 1 Million Massachusetts Citizens Lack the Skills Needed for the New Economy.

- The skills requirement has changed over the last two decades. What is considered "basic" has also changed. Today, to secure a middle-class job, workers must be able to solve complex problems, think critically, communicate effectively, and use computers. . . .page 2

- We have identified three groups of working-age adults in Massachusetts that each face different challenges in upgrading their skills. . . . . .page 8

- 1,142,000 workers in Massachusetts lack the skills and education needed in the New Economy. (This is an unduplicated count, created by combining the three groups below.) Thus, about 1 in 3 workers in Massachusetts are not adequately prepared for the New Economy. . . . . page 27

195,000 Immigrants Have Limited English Speaking Skills (A Language Challenge)

- Immigrants play a vital economic role in Massachusetts. Since 1990, all of the state's net labor force growth has been the result of new immigration. Over the last decade, the labor force in the Commonwealth grew at a rate of 1½ percent. If not for the inflow of immigrants, the state's labor force would have actually shrunk in the 1990s. . . . . .page 8

- Many new jobs in Massachusetts are professional, managerial, and sales positions. Immigrants who do not speak English well are not able to fill these jobs. These jobs have high vacancy rates, and immigrants seeking to fill them have limited options. . . . . .page 11

- The best data available suggest 195,000 immigrants in the Commonwealth have limited English speaking skills, and that number, which is based on the 1990 Census, is almost certainly higher today. . .page 11

- The ability of immigrants to speak English well is a major concern for employers, but it is also a concern for the immigrants themselves. An immigrant with a bachelor's degree who is fluent in English earns 2.5 times as much as an immigrant with a bachelor's degree who does not speak English. . .page 12 (Table 2.5)

280,000 Adults Lack a High School Credential (An Education Credential Challenge)

- High school dropouts pay a steep economic price for not having a credential. They are the group most adversely affected by changes in the labor market over the last two decades. . . . . .page 12

- There are 280,000 working-age high school dropouts in the Commonwealth. . . . . .page 13

- In addition, another 110,000 immigrants (already counted as part of the "Language Challenge" above) face the dual problems of weak English speaking skills and the lack of a high school credential. . .page 13

- In fact, immigrants account for nearly four out of every ten high school dropouts in the state. The incidence of school dropout problems among immigrants in Massachusetts is nearly four times higher than that among native-born adults. . . . .page 14

667,000 High School Graduates Lack the Skills Needed for the New Economy (A New Literacy Challenge)

- In 1992, the National Adult Literacy Survey (NALS) measured the literacy skills of the adult population in the country. People who scored in the lowest two levels (Level 1 and Level 2) are not illiterate in the traditional sense but, rather, have limited skills that restrict their ability to participate in the New Economy. Experts across the board, including the National Governors' Association, agree that today's economy and society require skills at Level 3 or higher. This new definition of "literacy" measures adults' skills across a wide array of tasks that reflect the reality of the demands of the 21st century. . . . . .page 16

- There are 667,000 workers who have a high school credential and who have literacy skills in the lowest two NALS levels in Massachusetts. . .page 26 (Table 2.23)

- Stronger skills translate into higher incomes. The average annual pay of workers at the highest literacy level (Level 5) is $45,650 compared to $16,500 for workers at the lowest literacy level (Level 1). page 21 (Table 2.14)

✓The ABE System is Well-Positioned to Meet the Language and Education Credential Challenges

The adult basic education system, operated under the state's Department of Education, is one of the principal places that adults with limited skills begin to build their skills. By adult basic education, we mean basic literacy classes, GED classes that prepare students to earn a high school credential, and classes in English for Speakers of Other Languages (ESOL). We have argued that the ABE system is best-suited for and, therefore, should focus on meeting the Language and Education Credential Challenges.

ABE Funding and Capacity

- Over the last six years, the state has demonstrated a serious commitment to adult basic education by substantially increasing its funding. In 1994, the state spent about $4 million on ABE. In 2000, that number had increased more than sevenfold to about $30 million. . . . . page 36

- In those same 6 years, federal funding for ABE in Massachusetts increased by less than $3 million. .page 36

- The number of ABE students has increased dramatically, and the quality of instruction has improved. In 1994, 14,557 students participated in classes. In 2000, 24,581 students are expected to participate. . . . . page 36

- With virtually no outreach or marketing, there is already a huge demand for instruction that far exceeds the supply of ABE class seats. The number of students on waiting lists, one yardstick of the demand, has ranged from 8,000 to 16,000 people during recent years. . . . . page 31

- The greatest demand is for ESOL classes. More than half of those who wait seek these classes. The waiting period ranges from five months to enroll in basic literacy classes to more than a year for ESOL classes. page 31

- The state has tried to eliminate the waiting lists through increased funding, but waiting lists have not disappeared. Despite the substantial increases in the number of slots available, the waiting lists have remained at roughly the same length. . . . . page 31

- The number of phone calls to the state's literacy hotline is another way to assess the demand for services. On a shoestring budget, the hotline conducts limited outreach and advertising. Nonetheless, in the first five months of 2000, the hotline received approximately 750 calls from people seeking services for themselves, family members, or friends. . . . . page 31

RECOMMENDATION: Eliminate waiting lists by Fiscal Year 2003. The Legislature should expand state funding to the Department of Education for adult basic education so that everyone who wants to improve their basic skills, learn to speak English, or study for the GED test can obtain help within a reasonable amount of time. As it stands now, waiting lists are excessive, and it is unreasonable to demand that potential students wait months for an opportunity to enroll. The Department should develop a comprehensive waiting list remediation strategy with the explicit goal of reducing the current waiting list size and duration to nominal levels by Fiscal Year 2003.

RECOMMENDATION: While funding is only one measure of commitment to an issue, it is clear that increased federal leadership—both at a fiscal and a policy level—is urgently needed. The federal government needs to encourage companies to invest in basic skill training. The Progressive Policy Institute is calling for a 30 percent federal tax credit for company investments in .remedial education, literacy training, and English as a Second Language. We agree, and call on the Massachusetts Congressional delegation to work to enact this important proposal.

✓Adult Basic Education is Effective: Summary of Key Research Findings

To assess the return on the state's investment, we used 1998 Department of Education data to do the first comprehensive quantitative analysis of student outcomes in the history of ABE in Massachusetts. We asked a simple but crucial question: Does participation in adult basic education programs lead to positive outcomes? The conclusion we reached was a definitive yes.

- More than half of the participants achieved learning gains, and almost one-third gained more than two grade levels (or student performance levels in the case of ESOL students). . . . . page 60 (Table 6.4)

- Students who entered at beginning levels tended to achieve greater learning gains than those who entered at more advanced levels. The average gain for beginning adult literacy classes was 1.53 grade levels, compared to .61 in the most advanced classes. In beginning ESOL classes, the average gain was 1.38 SPL (student performance levels), compared to .48 SPL in advanced ESOL classes. . . . . page 59

- On average, in 1998, students received 97 hours of instruction. That number appears to be increasing each year. . . . . page 60

- As students received more hours of instruction, they were more likely to achieve learning gains. Of the ABE students who received between 151 and 175 hours of instruction, 75 percent achieved a learning gain of one grade level or more. Only 29 percent of the students who received between 1 and 10 hours of instruction achieved the same. . . . . page 61

- The same pattern held true for ESOL students. Of the ESOL students who received between 151 and 175 hours of instruction, 77 percent achieved a learning gain of one SPL or more compared to only 35 percent of the students who received between 1 and 10 hours of instruction. . . . . .page 61

- Many students attended classes for only a short time. 3,780 (19 percent) of the students dropped out before receiving 25 hours of instruction, approximately a month's time. This suggests at least 1 in 5 students are not attending class long enough to achieve substantive learning gains. . . . . page 61

- Retention was less of an issue for ESOL students than for ABE students. 14.9 percent of ESOL students left before receiving 25 hours of instruction, compared to 23.6 percent of ABE students. . . .page 61

- ESOL students also tended to receive more hours of instruction. 23.6 percent received at least 150 hours of instruction, compared to 18.6 percent of ABE students. . . . . page 61

- As pre-GED and GED students receive more hours of instruction, the probability of earning a high school credential increases. . . . . page 62

- The probability of earning a high school diploma depends on the number of hours of instruction, the background characteristics of the students, and the location of the instructional site. . . . . page 62

- Of the participants who were looking for work, 18.2 percent found a job during the fiscal year, but we know nothing about the quality or wages of those jobs. . . . . page 67

- The experience of finding a job is different for ESOL and ABE students. For unemployed ABE students, the greater the learning gains of the participants, the greater the probability that the participants will find a job. As ABE students receive more hours of instruction, the probability that they find a job increases. If an ABE student receives public assistance, there is a lesser chance that student will find a job. . page 67

- In contrast, for unemployed ESOL students, the number of hours of instruction they receive does not affect the probability that they will find a job. Factors other than hours of instruction explain who will find a job. One possible explanation is the availability of job placement services. Another is the extent to which the participant is connected to community resources that may assist her in finding a job. . . . . page 67

RECOMMENDATION: As students stay in class longer, they are likely to learn more. Yet, we know that 1 in 5 students drop out of class before 25 hours. The situation is not acceptable. The Department should set two goals. First, 1 in 3 students ought to receive a minimum of 150 hours of instruction. ABE programs and the Department of Education must make a greater effort to help students remain in class and to determine why students leave classes. Second, the Department should set an explicit policy goal to reduce the percentage of students unenrolling before 25 hours of instruction (currently 19 percent).

RECOMMENDATION: Whether a student is likely to earn a high school credential is influenced by the number of hours of instruction, the student's background characteristics, and the program through which that student attends classes. While we know the site is important, we don't know exactly what matters about a given site, and we recommend this as a topic of future study. As funders of ABE programs, local

and regional foundations should fund evaluation and qualitative research to help understand what makes a site effective.

RECOMMENDATION: In order to know what happens to participants after they leave the classroom, we strongly believe the adult basic education system should collect students' social security numbers in order to integrate ABE data with information from the different state agencies. This would allow us to know what happens to participants over time in the labor market. In the absence of hard data about the future earnings of ABE participants, it is impossible to say definitely whether state monies are being targeted toward the most effective ABE providers. To be sure, economic gains are only one benefit of ABE instruction. But we will never know to what extent ABE results in meaningful gains for workers until we examine the future income growth of those workers.

✓Six Smart Ways to Improve ABE

(1) Weekend Classes

- Our research confirms that more hours of instruction help participants achieve better outcomes. Yet, class offerings are extremely limited on the weekends, which not only limits the number of hours students can attend class but also excludes two days that would potentially be very convenient for students. Less than two percent of the total classes are offered on Saturday. Excluding classes in correctional institutions, only 25 classes—19 ESOL classes and 6 ABE classes—are offered on Saturdays. . . page 42

- When students register for classes, they indicate their preferred times for classes. A total of 6,959 students indicated that Saturday would be convenient for them. 3,832 ESOL students across the state said that Saturday would be convenient for them. There are no ESOL classes in southeastern Massachusetts offered on Saturday, despite the large number of immigrants in that region. . . . . page 42

- There are no classes offered on Sundays. Students are not even asked whether Sunday would be a convenient time for them. . . . . page 42

(2) Teachers

- Experienced, seasoned teachers are crucial for learning. Unfortunately, there is a high turnover rate for teachers. 73 percent of ABE teachers have been with their programs for less than three years. . . . . page 54

- According to research studies, full-time teachers are an important factor in program quality. Only 36 percent of Massachusetts ABE teachers are full-time. page 54

(3) Technology and Distance Learning

- Technology and distance learning offer opportunities to allow students to spend more time learning each week. The Department of Education has begun to experiment with this method of instruction. page 33

(4) Funding

- Adult basic education is funded differently from the other educational systems in the Commonwealth. Rather than state funding going directly to long-standing institutions with largely permanent staffs and established physical infrastructures (buildings, campuses, etc.), funds are distributed largely to community-based private providers. These providers are responsible for hiring instructors on a class-by-class basis and for arranging the physical space where the class is held (renting community centers, securing donated office space, etc.). . . . . page 38

- This creates a fragile system characterized by an environment of uncertainty. It also decreases the incentives for long-term investments and even long-term planning. . . . . page 38

(5) Intensity of Instruction

- Increasing the intensity of instruction, which is the number of planned class hours per week, increases the probability that high school dropouts will earn a high school credential before the end of the (fiscal) year. . . . . page 65

- A short, intensive GED class appears to be more effective than a class that meets for a few hours a week spread out over a long period of time. A student who receives 100 hours of instruction at 12 hours per week has the same probability of getting a high school credential as a student who receives 225 hours of instruction at 6 hours per week. It will take the second student more than twice as many hours of instruction to have the same likelihood of earning a high school diploma. . . . . page 66

(6) Link ABE to the workplace

- By putting less pressure on a worker's schedule, classes at the workplace are more convenient for participants and their employers. One innovative approach already being used—but worthy of further expansion—would have employers offer at least half of the class time as an in-kind benefit to employees. . . page 49

- Research suggests there are substantial productivity payoffs to workplace literacy programs. For example, workplace programs bring workers closer together. Often for the first time, they speak a common language. They also work better as a team because of their shared experience in the classroom. . . . . page 49

- The employers we interviewed in Massachusetts were satisfied with workplace education programs. One employer notes that employees are more self-sufficient and that customer service improved as a result of classes. Another employer credits the company's ability to survive and thrive on its investment in upgrading the skills of its workers. . . . page 48, 55

- Small employers in close geographic proximity can pool resources and jointly offer classes. The Harvard Square Consortium in Cambridge offers a positive model. . . . . page 46

- Labor unions have a vital role in workplace learning. They help to identify workers who might benefit from instruction, and by offering classes at a union training facility or headquarters, they provide a meeting place for workers who do not share a common workplace. . . . . page 51

- For those who receive basic skills instruction outside the workplace, more systematic links to the workplace are needed to maximize the benefits of instruction for the worker. . . . . page 49

RECOMMENDATION: The Department of Education should immediately launch an effort to increase the number of weekend classes and make sure weekend classes are available across the different regions of the state. Sunday classes also deserve experimentation.

RECOMMENDATION: Increased teacher salaries with benefits are necessary to create a highly skilled teaching staff and encourage a long-term commitment to the profession. We recommend that the Department of Education set a goal that 50 percent of all teachers will be full-time by Fiscal Year 2004. While adult basic education should increase the number of full-time teachers, there is still an important role within the ABE system for part-time teachers because of the required flexibility. The large number of K-12 public school teachers who may be retiring in the next few years due to an early retirement incentive package recently enacted by the Legislature could help the ABE system. These retiring teachers should be identified and aggressively recruited by the Department of Education.

RECOMMENDATION: Philanthropic foundations concerned with adult literacy should consider funding an evaluation in order to learn the most from the current Distance Learning Project in Massachusetts as well as distance learning efforts in other states and help bring these efforts to scale.

RECOMMENDATION: A gradual introduction of "hard funding" is an extremely worthwhile goal for the Department of Education to pursue. However, the move from a "soft funding" approach to a "hard funded" system may take several years, and it is unclear what form it should take.

RECOMMENDATION: The Department of Education should add intensive GED classes to its curriculum. Intensive courses are cost-effective and a better way of teaching students. At an investment of $1,469 per student plus certain fixed costs compared to the current cost of $3,300 per student, the state could greatly increase the number of adults in the state with a high school credential. The state should target 100,000 high school dropouts whose skills are at about the tenth-grade level. For their part, employers can play a leading role by offering intensive GED classes on-site.

RECOMMENDATION: The Board of Education should explore the viability of using intensive GED classes as a safety net for students unable to pass MCAS exams. For the large number of students—perhaps as many as 25,000—who are likely to fail the MCAS exam, intensive GED classes may offer an effective, albeit not ideal, short-term alternative to a high school diploma.

RECOMMENDATION: The monies that employers contribute annually to the state's Workforce Training

Fund (WTF) could be allocated more effectively by devoting a larger portion explicitly toward basic skills instruction. Currently, the fund only allocates about ten percent of its funds to basic skills instruction. This amounts to a marginal amount of funding for what is a major labor force challenge. For this reason, we recommend that the WTF dedicate one-third of its grants to basic skills instruction.

RECOMMENDATION: To encourage companies and help share the cost of enrolling their employees in developmental education classes, the state should establish a Basic Skills Training Tax Credit.

RECOMMENDATION: We must build on precedents for sound policies that encourage employers to share the cost burden of providing instruction at the workplace. Currently companies that receive assistance through the Department of Education's Workplace Education initiative (part of ABE) must provide salary for at least half of the time workers spend in class as an in-kind benefit. This effectively doubles the time in class for workers. This principle should be more widely applied with more aggressive outreach to prospective employer partners.

✓Increase Accountability of the ABE System

The state should hold the ABE system more accountable. The first step is to improve the quality and quantity of data. The Adult and Community Learning Services (ACLS) division of the Department of Education deserves credit for its commitment to provide a more accurate picture of our ABE and ESOL efforts. Much work remains, however, to improve the quality of data.

- The Commonwealth should pay for a state sample of the next National Adult Literacy Survey (NALS) in 2002. This survey will give us an even more accurate picture of the population in need in Mass. The expected cost of participation is $750,000, which is a substantial amount but is also well within the state's fiscal capacity. . . . . page 88

- The Department of Education should be required to issue an annual report describing who participated in programs, what the turnover rate of students is, how many hours of instruction students received, what learning gains were achieved, and what happened to students after they left the classrooms. . . . page 70

- When students enter adult basic education programs, they are tested or assessed in other ways to determine their starting level; they are also tested when they leave a class or at the end of the fiscal year. The quality of program-level data should be improved. When we reviewed the 1998 data, we found that assessment dates and methods related to entry and exit levels were lacking for the majority of students. This severely limits our ability to assess learning gains. The Department of Education must work more closely with programs to ensure accurate data, including the use of rewards and sanctions for providers struggling to comply with data collection. . . . . page 70

- At the same time, the Department should do more to standardize the methods of assessment. Currently, programs can use one of more than 50 methods of assessment; this number should be reduced to the several most common forms of assessment. page 70

- Social security numbers of participants should be collected in order to track what happens to participants over time in the labor market. Privacy is a real concern and there must be allowances for people who do not want to provide this information or do not have social security numbers. We believe that these issues can be addressed with proper safeguards. In order to make this happen, the Governor's Office should exercise the leadership necessary to resolve interagency disputes as well as identify instances where agency statutory changes are required. . . . . page 68

- A longitudinal study should be conducted to track ABE student outcomes over an extended time. As a way to cut costs, the Department should consider collecting information only on a subset of ABE participants. The Department could then include qualitative data in addition to the quantitative measures. If the Department pursues this option, it is important that the participants are randomly selected and that there are a sufficient number of participants to draw general conclusions from the findings. . . . page 70

✓Create a New System of Community College–Employer Partnerships to Meet the New Literacy Challenge

- There are 667,000 workers in Massachusetts with a high school credential who have skills less than NALS Level 3, the level cited as the minimum level of literacy for the twenty-first century by a broad range of experts. . . . . page 26

- The ABE system currently has few options for students who have a high school credential but who still need their skills upgraded. To meet these workers' needs through the ABE system would require the creation of a new sequence of classes. . . . . page 44

- Community colleges are, for several reasons, an attractive alternative resource. Community colleges through their developmental education programs already work with a number of employers to help upgrade workers' skills. In addition, the geographic distribution of the community colleges enables them to reach companies across the state, and because campuses are already doing this type of work on a modest scale, they have some expertise in the area. . . . . page 44

RECOMMENDATION: Developmental education should be expanded through aggressive outreach and marketing. We believe this should be done through a new system of public-private partnerships between community colleges and employers. The Legislature has already taken steps to move community colleges down this path by establishing two new programs. It appropriated $2.9 million to establish and implement a new Community College Developmental Educational Program and another $2.1 million for a new Community College Workforce Training Incentive Program. These programs provide a strong incentive for community colleges to expand their relationships with local employers. It is imperative to now build on these efforts.

✓ABE and Job Training Programs Should be Much Better Integrated

- In Massachusetts, job training and adult basic education are run separately and are governed by different agencies with little institutional linkage between them. The lack of linkage limits our ability to get the most value from either job training or adult basic education. . . . . page 72

- Many workers who show up for job training have limited basic skills. Without the basic skills instruction, their job training options are severely constrained since many vocational and technical training programs have a minimum 9th or 10th grade equivalency requirement for participation. . . . . page 73

- Primarily because of limited funding, not all eligible people who come for job training help actually receive training and education services. . . . . page 75

- Those with the most limited abilities are less likely to receive training or educational classes. When they do get help, they are less likely to get occupational training or on-the-job training. Studies show that workers who participate in these two types of programs receive higher wages and have higher rates of employment than workers who do not. . . . page 77

- Workers who do not have 9th or 10th grade level proficiencies are the least likely to receive training or education services. Moreover, they are rarely referred to a system that could help them: the adult basic education system. According to the DOE's own intake forms, only 314 students were referred to ABE by one-stop Career Centers. This suggests considerable room for improvement. . . . . page 81

- Similarly, the adult basic education system is not linked well enough to the job training programs. In 1999, 557 ABE participants (2.38 percent) cited that they planned to enter an education or training program. . . . . page 81

RECOMMENDATION: The state should offer incentives to help overcome some of the obstacles to interagency coordination. For the first year, the state should consider targeting $1 million to programs or pilot projects that combine adult education, training, job placement, post-hiring services, etc. These projects would be designed and implemented jointly by different agencies, such as the Mass. Department of Education and the Corporation for Business, Work, and Learning. Over time, with interagency coordination as an explicit criterion, funding for such projects should increase.

CHAPTER 1 NEW BASIC SKILLS FOR A NEW ECONOMY

THE NATIONAL ECONOMY has changed dramatically over the last two decades, and the new knowledge-based economy depends on workers who have high levels of education and skills. As the economy has changed, so has the rest of society, and workers who lack certain basic skills are finding it difficult to live, never mind work, in today's world. Before discussing how and why these new basic skills have become so important, we describe three categories of people who face the greatest challenges: those who have a limited ability to speak English (a Language Challenge); those who lack a high school credential (an Education Credential Challenge); and those who have low literacy and math skills, as measured by the National Adult Literacy Survey (a New Literacy Challenge). A person who belongs to any of these groups is not trained or educated sufficiently for the New Economy.

Defining the New Basic Skills

The increasing complexity of twenty-first-century life places a burden on us all.[1] As we confront each new problem or opportunity, we draw upon our unique sets of skills acquired over the course of our lives. Each era in our state's history has required a different set of basic skills. There was a time when these essential skills were defined by the demands of agriculture. In the twentieth century, industry and commerce defined these skills. Now, in the twenty-first century, it is essential to be able to participate in a world governed by complex information and communication technology.

Today's fundamental skills are cognitive, as in the agricultural age they were manual and in the industrial age, mechanical. In the twenty-first century, almost every problem and opportunity requires the application of skills that are learned in school. Adults who belong to any one of the following categories are not prepared to succeed in the New Economy:

- Those who have a limited ability to speak English
- Those who do not have a high school credential
- Those whose literacy and math skills are low, as measured by the National Adult Literacy Survey (NALS)

Fluency in English

In Massachusetts, English language fluency is measured in the adult basic education system along ten student performance levels (SPL). SPL 6 is the minimum level needed to contribute to and participate in an English-speaking society. Adults who have this level can usually be understood by native English speakers, can understand conversations in person but still have some problems over the phone, have control of basic grammar, can read simple materials, and can write notes and letters.

Education

Adults who lack a high school credential have limited options in today's economy. A high school credential is not only valuable in itself but also opens the door to training and further education. It is, therefore, a crucial building block in the foundation of a successful career and, by extension, a rewarding life.

Literacy and Math Skills

For the first time, in 1992, the U.S. Department of Education undertook a national survey, called the National Adult Literacy Survey (NALS), to measure the literacy and math skills of the nation.[2] The survey defined literacy as the ability to use "printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential."

The responses to the test were reported on a scale of one to five with each number representing a different level of skills, although there is a significant range of skills within each level. The lowest level of skills is Level 1 and the highest is Level 5. At the bottom of Level 1 are people who had almost no literacy and math skills, while at the top of Level 5 are people who could manage almost any task. Only people who scored in the lowest range of NALS Level 1 are illiterate —that is, in the traditional sense that they cannot read at all. By historical standards of literacy, such as the ability to sign one's name, read very short passages of text, or correctly add sets of numbers, the vast majority of the adult population, especially the nation's

1 For a fuller understanding of this issue, see Robert Kegan, *In Over Our Heads: The Mental Demands of Modern Life* (Cambridge: Harvard University Press, 1994).

2 See Irwin Kirsch et al., *Adult Literacy in America* (Washington, D.C.: U.S. Department of Education, 1994).

workers, would be classified as literate.

Many adults, however, could not successfully complete more complex tasks, such as interpreting text from longer articles or stories, making inferences from texts; making calculations involving multiple steps and using data from multiple sources; interpreting data using charts and graphs; and summarizing, comparing, and contrasting views expressed in stories or editorials.

The National Governors' Association has established Level 3 as the standard for being considered fully literate in today's world. Examples of NALS Level 3 tasks are planning travel arrangements for a meeting using a flight schedule, writing a brief letter explaining an error made on a credit-card bill, and identifying information from a bar graph that depicts sources of energy and years of production. The ability to function at NALS Level 3 is becoming the minimum standard for middle-class jobs.

The Importance of the New Basic Skills

Basic Skills and Work

At one time, mastering a set of mechanical skills could ensure a lifetime of employment and perhaps even a place for a son or daughter within the same workplace, but that possibility has become increasingly rare in a world marked by complexity, competitiveness, and market change. A single set of technical skills in today's dynamic economy is no longer sufficient. Workers must be prepared for a variety of jobs, workplaces, and even careers. The basic skills of literacy and math are transferable from job to job and facilitate the learning of new job-specific skills. Learning is necessary both to remain resilient in the ever-changing workplace and to use these changes to one's advantage.

Twenty years ago, basic skills were limited to reading, writing, math, and fluency in the English language, but new skills have been added to this list of what is considered essential. In *Teaching the New Basic Skills,* Harvard's Richard Murnane and MIT's Frank Levy present a list of the minimum skills needed to secure a middle-class job today based on their research into highly productive businesses.[3] They include:

- The ability to read at the ninth-grade level or higher
- The ability to use math at the ninth-grade level or higher
- The ability to solve semi-structured problems where hypotheses must be formed and tested
- The ability to work in groups with coworkers from different backgrounds
- The ability to communicate effectively, both orally and in writing
- The ability to use personal computers to carry out simple tasks such as word-processing

Murnane and Levy found that employers now view a college degree as an indication that an applicant has sufficient basic skills. Though literacy and math still form the core of a basic curriculum, they are no longer sufficient. Over the next few decades, the list of basic skills will grow longer and job candidates will be expected to have a greater mastery of each.

To understand the changes that have taken place over the last fifty years, consider the job histories of Joseph and Richard, two adults who were interviewed and tested in adult literacy classes in the Boston area in 1994.[4] Both men had extremely limited reading skills and were members of minority ethnic groups. Their backgrounds were similar but their experiences in the labor force were not.

Joseph was fifty-nine and had worked in auto factories from the 1950s through the 1980s. At that time, auto factories did not expect entry-level workers to have a high school diploma. Joseph rose to supervisory positions because he worked hard and had excellent interpersonal skills. First-level supervision in manufacturing did not require high-level literacy skills, and Joseph found ways to get help with the tasks that required skills he did not have. Joseph was rewarded for his knowledge of how to use and maintain the equipment in the auto factory, his ability to teach new employees how to do their jobs, and his skills at managing the workers on his team. He and his wife owned a triple-decker house, raised three children, and eventually established a small business. Though life was not always easy for Joseph, he earned a good living.

Richard was thirty-five years younger than Joseph. He was twenty-four. His literacy test scores were slightly better than Joseph's, but his job history was quite different. Richard left school at seventeen and had a series of low-paying jobs as a dishwasher, security guard, and clothing salesman. The better jobs that Richard wanted required a high school diploma. To move up within the jobs he did have required basic literacy and math skills to fill out forms, read graphs, use computers, record orders, and write letters. Richard could not find the entry-level job that would set him

3 Richard Murnane and Frank Levy, *Teaching the New Basic Skills* (New York: The Free Press, 1996). See also *What Work Requires of Schools: A SCANS Report for America 2000.* The Secretary's Commission on Achieving Necessary Skills (Washington, D.C.: U.S. Department of Education, 1991), *Learning a Living: A Blueprint for High Performance* (Washington, D.C.: U.S. Department of Education, 1992).

4 These case studies come from Catherine Snow and John Strucker, "Lessons of Preventing Reading Difficulties in Young Children for Adult Learning and Literacy," in *The Annual Review of Adult Learning and Literacy* (San Francisco: Jossey-Bass, 1999).

on the path to a lifelong career, nor could he move up in a company when he did find work. The prospects for Richard's future were not nearly as bright as they were for Joseph when he was twenty-four.

Many factors, of course, could explain the difference in the earning history of these two men, but stories like theirs are familiar to those who work in the field of adult basic education.[5] The backgrounds of these two men were similar. What has changed is the world of work. Adults who are now in their 50s and 60s entered the workforce at a time when workers with low basic skills and without high school diplomas could get good jobs in manufacturing and keep those jobs until they retired. Jobs in the same industries now require workers to read computer screens and enter data into information systems. Workers may change jobs many times during their careers as they seek better opportunities, and they must, therefore, have strong basic skills that can be applied to each new position.

Workers used to be artisans who learned their trade through a form of apprenticeship. Now, the workplace requires technicians who apply a general set of skills to many different and changing tasks.

We've all heard stories about how businesses are changing work so that people with low literacy skills can do their jobs. A typical story is of a fast food chain that puts pictures of its products on the cash register so that clerks do not need to be literate to operate them. The truth is that employers are more likely to change the job structure so that a highly literate worker can accomplish more with improved equipment.

Here in Massachusetts, the dramatic changes that took place at Malden Mills—a company that makes "fleece" for outdoor clothing—after the company's plant was destroyed by fire in 1995 highlight the transformation of work.[6] Before the fire, workers did their jobs by feeling the cloth coming out of the machines, listening to the sounds of the equipment, and then adjusting the settings that controlled the production process. After the fire, the process was operated through computer screens.

The reading, writing and math skills these workers now need are not elaborate or complex. They involve reading directions in manuals and data on computer screens, writing notes on actions taken and problems identified, and simple calculations. Workers, however, must be able to apply these skills in situations that change often. The need to apply basic skills to changing situations doesn't always require more skills but does require a higher level of fluency, speed, and accuracy.

The need for higher-level skills also requires English language fluency. In the traditional manufacturing that took place before the fire, an immigrant could learn the specific language skills needed for a job that never changed or changed slowly. Now, the necessary vocabulary and language skills change rapidly and must be applied in a more complicated work situation, which demands a higher level of fluency, speed, and accuracy.

The experience of Malden Mills illustrates how basic skills are becoming more important. In many industries, workers use computers to accomplish tasks that they used to do with expertise they had built up over years. Workers used to be artisans who learned their trade through a form of apprenticeship. Now, the workplace requires technicians who apply a general set of skills to many different and changing tasks.

Recent research on literacy and oral communications sheds some light on why higher levels of basic skills might lead to success in jobs that don't appear to demand these skills.[7] This research shows that oral-language skills change in relation to literacy levels. When speaking, people with higher levels of literacy provide more of the details that a listener needs to fully understand a complicated situation. This form of oral language is characterized by the use of broader category names (saying "furniture" when talking about chairs and tables, for example) and abstract vocabulary, which provides the more precise information that a listener needs to understand a situation that can't be experienced directly.

Modern workplaces require this style of speech. In traditional manufacturing, workers are immersed for years in the same context. They develop a language that might be incomprehensible if it were transcribed and shared. Now, because workers are immersed in a context that is constantly changing, more complicated oral communications, discussion, and group problem-solving skills are required. The oral discourse in the workplace is becoming more like the oral discourse in school, which is modeled on writing.

Skills and Income

A recent study indicates that there is a strong correlation between a person's literacy skills and his or her income.[8]

5 By adult basic education, we mean basic literacy classes, GED classes, and classes in English for Speakers of Other Languages (ESOL).

6 This is based on a conversation in April, 1999, with Johan Uvin, who directed the workplace education project at Malden Mills.

7 See Victoria Purcell-Gates, *Other People's Words: The Cycle of Low Literacy* (Cambridge: Harvard University Press, 1995); Robert LeVine et al., "Maternal Literacy and Health Care in Three Countries: A Preliminary Report," *Health Transition Review* 4 (2), 1994; Emily Dexter et al., "Maternal Schooling and Health-Related Language and Literacy Skill in Rutal Mexico," *Comparative Education Review* 42 (2), 1998.

8 Andrew Sum, *Literacy in the Labor Force: Results from the National Adult Literacy Survey*, NCES 1999-470, (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, 1999).

The conclusion is simple: the higher one's proficiencies, the higher one's earnings. This is true even within groups of people who have the same educational credentials. Table 1.1 shows that at nearly every level of education, weekly earnings increase as literacy skills increase.

TABLE 1.1

Average Weekly Earnings in 1992 of Full-time Employed Adults by NALS Literacy Skill Level

	Level 1	Level 2	Level 3	Level 4	Level 5
0-8 Years of Schooling	$298	$351	*	*	*
9-12 years of Schooling	$364	$357	$414	*	*
GED	$333	$364	$489	$529	*
High School Diploma	$369	$420	$436	$493	*
Some Post-secondary	$367	$455	$491	$597	*
Two-year Degree	$386	$504	$578	$610	$630
Four-year Degree +	$586	$677	$739	$866	$993

** Indicates that the number of cases is too small to provide reliable estimates. Source: Andrew Sum, Literacy in the Labor Force: Results from the National Adult Literacy Survey, NCES 1999-470, (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, 1999).*

TABLE 1.2

Gains in Weekly Earnings in 1992 as Literacy Skills Increase from Level 1 to Level 3

	Change in Wages From Level 1 to Level 3	Percent Increase From Level 1 to Level 3
0-8 Years of Schooling	*	*
9-12 years of Schooling	$50	13.7%
GED	$156	46.8%
High School Diploma	$67	18.2%
Some Post-secondary	$124	33.8%
Two-year Degree	$192	49.7%
Four-year Degree +	$153	26.1%

As the skills of workers rise from Level 1 (which indicates very limited skills) to Level 3 (which is what the National Governors' Association calls "fully literate"), they will experience noticeable gains in their weekly earnings. A worker with a high school diploma will earn $67 more dollars per week as his skills increase from Level 1 to Level 3. As educational levels increase, the size of the gain tends to increase as well. (The one exception is for GED holders who appear to experience an unusually large wage increase as their skills improve from Level 1 to Level 3.) The wages of workers who had some secondary schooling but not a high school credential increased 13.7 percent when their skills increased from Level 1 to Level 3. Among high school graduates, the relative difference for the same two groups was 18.2 percent. The wages of those worker with some post-secondary education increased by one-third, and the wages among workers with a two-year degree increased almost 50 percent (Table 1.2).

A person's level of skills and education each have an impact on income. Figure 1.1 shows how different literacy levels affect the income of adults, all of whom have the same educational level. In this case, all have high school diplomas.[9] Figure 1.2 shows the effects of a person's education. It shows adults who are at NALS Level 3 but have different levels of education.

FIGURE 1.1

Average Weekly Income for High School Degree Holders with Different Literacy Levels

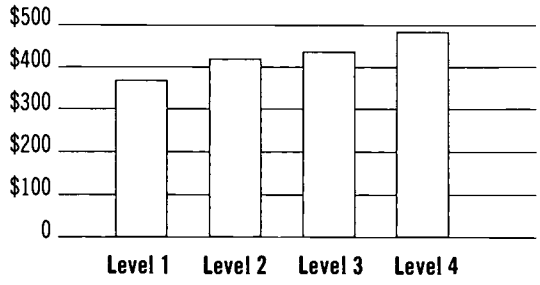
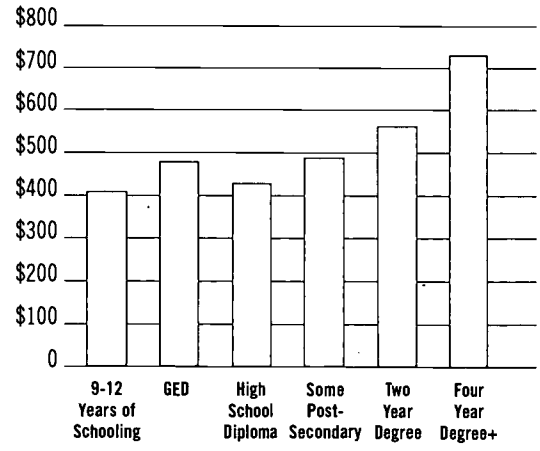


FIGURE 1.2

Average Weekly Income of NALS Level 3 Adults with Different Educational Levels



A person's education and skills each have an effect on income. The ability to earn more money is related to the type of job a person holds, and having more skills and a better education allows workers access to jobs that pay better.

Basic Skills and Family Life

Our everyday lives are becoming as complicated as our workplaces. For instance, thirty years ago, most people used cash and checks; now most have credit cards. The credit cards allow us to spend money we don't have,

9 This finding is further corroborated by another study that looked at the earnings levels of high school dropouts and found that the person's level of skills was an important determinant of earnings. See John Tyler, Richard Murnane, and John Willett, "Do the Cognitive Skills of School Dropouts Matter in the Labor Market?", NCSALL report, April, 2000.

but this convenience requires constant monitoring of account balances and interest payments, which in turn requires a certain level of reading and math skills.

Today's health-care system illustrates the complexity we confront constantly. A recent review by Rima Rudd of the Harvard School of Public Health indicates that educational attainment is a strong predictor of good health.[10] The research reviewed suggests that this relationship exists because education leads to a higher income, supports healthy lifestyles, and increases problem-solving abilities. Literacy enables access to crucial information about health and treatments. Literacy is critical in the management of chronic diseases, such as asthma and diabetes, that require a complicated regimen of medication, diet, and exercise for good management. Finally, high levels of literacy are needed to navigate the increasingly complex health care system, which requires active patient-management of their health care. Health care is becoming more complicated, but it is also becoming more effective. High levels of basic skills help people take advantage of the advances in medicine.

Thirty years ago, a worker in a large company would put in forty years of work and then retire with a company pension and social security. Now, many workers manage their own pension investments, and they may soon be asked to manage part of their social security funds. If an individual or a couple understands how our economic system works and how to use the information about investments that is freely available in print, on TV, and over the Internet, they can use small weekly investments to build wealth. These changes offer workers the opportunity to take more control over their lives, to ensure that their pensions will always be there even if their company disappears, and to decide to leave some of their accumulated wealth to their children. To take full advantage of these changes, adults need high levels of language, literacy, and math skills to understand their choices and monitor the performance of their investments.

These types of changes require adults to use their literacy and math skills to acquire information and build a base of knowledge for decisions about health care, finances, and retirement. The Internet is a powerful tool for acquiring this information, but good literacy skills are needed to use it and most of the information is available only in English. The skills needed for managing our everyday lives, however, are similar to those needed for work. Like work, we must apply a set of basic language, literacy, and math skills to many different and changing situations.

Influence of Parents' Literacy Skills on Their Children's Literacy Skills

The most critical family activity is the raising of children, and a child's chance for success in school is greatly affected by the education level, attitude toward learning, and economic stability of her or his parents. A recent report finds that a child's ability to learn to read in school is related to the preparation and support provided by parents before that child enters school and while he or she is in the first three grades.[11] Parents are their children's first teachers and their prime support for success in school.

A 1999 Department of Education study looked at six specific activities that can help parents prepare preschool children to learn to read in school. The activities included: reading to children; telling stories; teaching letters, words and numbers; teaching songs or music; doing arts and crafts; and visiting a library. The study, which only looked at mothers, found that the better-educated the mother was, the greater the likelihood that her three-to-five-year-old children had participated in these activities. For example, 61 percent of mothers who did not have a high school degree had read to their children, 85 percent of mothers with some college had read to their children, and 91 percent of mothers with a college degree had read to their children.[12]

Michigan State University Professor Victoria Purcell-Gates's recent book *Other People's Words* presents a case study of a family of four in which a school-aged child is struggling to learn to read. Neither the child's mother nor his father uses reading and writing in their daily lives, and the boy never sees these skills used in his home. Both parents are intelligent, but they never developed good reading skills. The father was interested in history and nature, and watched television programs and videotapes on these two topics, but he never read about them. The child in this family was living in a culture that did not include literacy, and when he entered school, he was unfamiliar with reading.

At the opposite end of the spectrum, reading expert Denny Taylor studied children in families where literacy was an important and pervasive element in their culture.[13] He found that children who grew up in these highly literate homes developed complex linguistic skills and extensive vocabularies early. Their parents demanded more detail from them when they answered

10 Rima Rudd, "Health and Literacy: A Review of Medical and Public Health Literature," in *The Annual Review of Adult Learning and Literacy* (San Francisco: Jossey-Bass, 1999).

11 Catherine Snow, Susan Burns, Peg Griffin, *Preventing Reading Difficulties in Young Children* (Washington, D.C.: National Academy Press, 1998).

12 *Home Literacy Activities and Signs of Children's Emerging Literacy, 1993 and 1999.* (Washington, D.C.: National Center for Education Statistics, 1999).

13 Denny Taylor, *Family Literacy: Children Learning to Read and Write* (Exeter, N.Y.: Heinemann, 1985).

questions, and these children heard complex vocabulary in their everyday lives. Children in these families learned to read and write as a natural part of their lives, and they viewed literacy as important and interesting. Reading and writing, for them, was just another way of communicating. For these children, school was a familiar and friendly environment.

Keith Stanovich of the University of Toronto calls the cumulative affect of a weak foundation for developing literacy skills the "Matthew effect," which comes from the discussion of "the rich get richer and the poor get poorer" in the New Testament book of Matthew.[14] If children come into school unprepared to learn, they may have trouble developing the basic skills of reading. As the children who are prepared move forward, the less prepared are always a step behind. If children also have learning disabilities, then they are even more disadvantaged. Underperforming children are put in reading groups that use books with simpler vocabulary and content than books used by children in advanced groups. As they pass through the first and second grades, underperforming children may become frustrated with their lack of progress in relation to the rest of the class. For them, reading is less enjoyable, which leads them to read less. Their better-prepared classmates read more and become fluent readers. These differences may be small in kindergarten, but by fourth grade the cumulative effect can lead one child to succeed and another to fail.

Basic Skills and Community

The success of our communities depends on the level of basic skills of the people who live in them. More than ever, citizens need strong basic skills to understand school issues, real estate, commerce, laws and codes, zoning regulations, proposed legislation, and the platforms and qualifications of political candidates. They need to know how to gain access to administrators, policy makers, and police, to unite and advocate for change, to inform one another, to negotiate among themselves and with those in power, to use the power of their votes, and to seek and hold positions of power themselves. They must understand how to use the media to support community goals.

There is very little research on the relationship between literacy skill-level and issues of citizenship and community participation. One of the few relationships was identified in the initial analysis of NALS data. The study found that people with higher levels of literacy were more likely to vote. Only 55 percent of NALS Level 1 and 61 percent of NALS Level 2 adults had voted in a national or state election in the past five years. In contrast, 69 percent of NALS Level 3, 80 percent of NALS Level 4, and 88 percent of NALS Level 5 adults had voted in an election in the previous five years.

The successful dissemination of public health, safety, and environmental information depends, in part, on the ability of adults to read. Information on these issues is growing more technically sophisticated. The effects of ingesting lead paint, the safety of household products, the risks of radon in our homes, and the potential impact of a radioactive waste storage site are difficult matters to present in simple terms. Newspapers are an important source of information on these topics, but adults with low literacy skills are less likely to read a newspaper. Only 35 percent of people who scored at NALS Level 1 reported reading a newspaper every day, while almost 60 percent of those who scored at NALS Level 5 reported reading a newspaper every day.

Our state and its many communities need the help and commitment of all of our citizens. A lack of basic skills narrows an individual's range of opportunities for social participation and reduces the likelihood that he or she will earn a good income. In turn, this can lead to frustration and anger. People with a high level of basic skills are more likely to develop the future-oriented perspectives that help them invest in constructive activities that can support improvements in our social and political systems.[15] We need all citizens to have the basic skills necessary to participate fully in the social and political life of the Commonwealth. A growing and healthy middle class is the foundation for a healthy Commonwealth.

The Importance of Literacy Skills for the Workplace

A person's literacy skills and education almost always determine his or her success in the labor market. Workers with high levels of skills and a strong educational foundation are able to leverage their abilities into economic value. Employers bid for these high-skilled workers.

Employers seek out these high-skilled workers because of the payoff that they will collect. Part of this payoff comes in the form of higher productivity.[16] Recent research confirms these returns on human capital. One study found that increasing the average educational level of workers in a firm by one year raised

14 Keith Stanovich, "Matthew Effects in Reading: Some Consequences of Individual Differences in the Acquisition of Literacy," *Reading Research Quarterly* 21 (1986):360-406.

15 Jere Behrman and Nevzer Stacey, eds., *The Social Benefits of Education* (Ann Arbor: University of Michigan Press, 1997).

16 Higher productivity also helps the worker since most real wage gains come from increases in productivity. See Sue Berryman, "The Role of Literacy in Wealth of Individuals and Nations," NCAL Technical Report TR94-13, National Center on Adult Literacy, University of Pennsylvania, Philadelphia, September, 1994.

productivity as much as 8 percent in manufacturing and 13 percent in non-manufacturing industries. This same study found that non-manufacturing employers that invested in computer training for non-managerial workers experienced 20 percent higher productivity than otherwise similar businesses.[17] Other studies corroborate these findings. In fact, two separate studies found that an increase in workplace training can raise productivity of a business by 16 percent or more.[18]

Employers who invest in increasing their workers' skills recognize the benefits. A recent Conference Board study interviewed employers about the increased skills that resulted from workplace education programs. The study found that employers believed that the workplace education programs had increased their employees' skills, and this had both direct and indirect economic benefits. The direct benefits included increased output, reduced time per task, reduced error rate, a better health and safety record, reduced waste in production of goods and services, increased customer retention, and increased employee retention. There were also a variety of indirect economic benefits, such as improved quality of work, better team performance, and improved capacity to cope with change in the workplace. The employers clearly saw the benefits. In fact, 98 percent of the employers reported at least one benefit was gained because of their workers' improved skills.[19]

Employers seek out these high-skilled workers because of the payoff that they will collect.

The benefits do not stop at the company level. They also help the national economy and society in general. The International Adult Literacy Survey (IALS) found strong links between economic growth and labor-force skill.[20] At the societal level, small increases in productivity matter. Indeed, a relatively small increase in national productivity that may result from improvements in workers' basic skills will have a large impact on a country. That improvement in productivity should lead to an increase in public revenue and a decrease in the costs of unemployment. Thus, the economics of literacy are important not only for the individual but also for employers and government. Increases in workers' literacy skills benefit everyone.

Concluding Thoughts

Everyone should care about the level of literacy skills of the people of Massachusetts. These skills are important for individuals, for business, and for society. Today's worker and citizen must be able to speak English and must have strong literacy and math skills. A career that leads to a middle-class income now demands these skills, and the problems and opportunities that arise in a middle-class life demand them as well. There is a payoff to having these skills. People with higher skills earn higher wages. This is true for high school dropouts as well as for people with college degrees. Skills make a difference in the earnings of workers and in their lives.

While the entire nation relies on a strong workforce, Massachusetts's economy, in particular, has been built around an assumption of a highly skilled workforce. Yet the state is starting to experience shortfalls in human capital. The vacancy rates for some high skilled positions are approaching an astounding eight percent. Even vacancy rates at two or three percent are quite serious.

Adults who have low literacy and math skills, who do not speak English, or who do not have a high school degree are a great untapped resource. This is particularly compelling at a time when unemployment rates are at a thirty-year low and there has been practically no growth in the labor force in the Commonwealth. The state's current boom cannot be sustained without more skilled labor. In our state, there are no workers to waste. Ignoring some workers because they lack skills is as big a threat as the persistent out-migration of workers to other states.

This phenomenon hurts us all. It threatens the state's economic prosperity, and it also erodes the state's middle class. A healthy and growing middle class is the foundation of a healthy Commonwealth and the cornerstone of a healthy economy.

17 Sandra Black and Lisa M. Lynch, "Human Capital Investments and Productivity," *American Economic Review* 86, no. 2: 263-68.

18 See Ann Bartel, "Formal Training Programs and Their Impact on Labor Productivity: Evidence from a Human Resource Survey," NBER working paper no.3026, Cambridge, MA, 1989; John Bishop, "The Impact of Previous Training on Productivity and Wages," in Lisa Lynch, editor, *Training and the Private Sector: International Comparisons* (Chicago: University of Chicago Press, 1994).

19 "Turning Skills into Profit: Economic Benefits of Workplace Education Programs," The Conference Board, Inc., New York, 1999.

20 See Organization for Economic Co-Operation and Development Statistics Canada, "Literacy, Economy and Society: Results of the First International Adult Literacy Survey," Ontario, 1995; Organization for Economic Co-Operation and Development Statistics Canada, "Literacy Skills for the Knowledge Society: Further Results from the International Adult Literacy Society," Ontario, 1997.

CHAPTER 2 WHO LACKS THE NEW BASIC SKILLS?

HOW MANY PEOPLE lack the basic skills that we have argued are so important for today's world? In this chapter, we provide a detailed description of this population in the Commonwealth. We focus only on working-age adults, and we focus on three distinct challenges: Language, Education Credential, and New Literacy. While many people face more than one of these challenges, we focus on each separately by looking at the following three groups: 1) immigrants who have limited English speaking skills; 2) persons lacking a high school diploma or GED; and 3) persons 16-64 years old with at least a high school diploma who have low literacy skills, as measured by the National Adult Literacy Survey (NALS). In the third group, we consider full-time employed people, part-time employed people, and unemployed people. At the end, we arrive at an unduplicated estimate of 1,142,000 people who are not sufficiently educated or trained to participate adequately in the New Economy. The number would be even greater if we were to include people who are out of the labor force but might enter it if their skills were stronger and could command higher wages or more suitable employment opportunities. Despite all of our current efforts to offer basic skills instruction, we still only reach a tiny portion of the population in need.[1]

A Language Challenge: Immigrants Who Have Limited English Speaking Skills

Foreign immigration presents a growing source of demand for adult basic education and English for Speakers of Other Languages (ESOL) instruction in the Commonwealth. The state has become increasingly dependent on foreign immigration for growth in the resident population and the state's civilian labor force.[2] Between 1990 and 1998, the state's total resident population increased from 6.016 million to 6.147 million, a gain of only 131,000 or 2.2 percent.[3] Over the same time period, net international migration (the difference between immigration from other countries and out-migration of residents to other countries) in Massachusetts was estimated to be 135,103, accounting for all of the net growth in the state's population over this eight-year period.[4] Since foreign immigration has tended to be underestimated by the U.S. Census Bureau in the past and since many immigrants arrive in Massachusetts as a second or third home after arriving in the United States, these estimates of net foreign immigration into Massachusetts are likely to be biased downward.

The new immigrants also have played a key role in generating labor force growth in our state and in the entire Northeast region, especially in southern New England, New York, and New Jersey, where all of the net growth in the resident labor force since the mid-1980s has come from abroad.[5] In Massachusetts alone, nearly 90 percent of the net growth in the state's resident labor force since 1986 has been attributable to foreign immigration, and all of the state's net labor force growth since 1990 has come from abroad.

The immigrants of the 1980s and 1990s in Massachusetts have differed in a number of key respects from those of earlier decades. They are considerably more racially and ethnically diverse, and they come from a substantially larger number of different countries, with Latin American, Asian, and Caribbean countries contributing a growing share of the new immigrant waves over the past two decades.[6] The vast majority of new immigrant arrivals in Massachusetts came from non-English-speaking countries. Over the 1990-97 period, fewer than 10 percent of the 176,000 new immigrants arrived from either the United Kingdom, Ireland, or Canada, and some of the Canadians were from French-speaking Canada.[7]

The educational backgrounds of the new immigrants are also quite varied, containing a relatively high share of both adults with fewer than twelve years of schooling and those with a bachelor's or higher degree. Slightly over one-fourth of all 16–64-year-old immigrants residing in Massachusetts who had come to the U.S. since 1990 lacked a high school diploma or GED

* This chapter was written by Andrew Sum and W. Neal Fogg

1 In the earlier MassINC report *Closing the Gap: Raising Skills to Raise Wages*, we reported, based on an analysis by the Mass. Department of Education, that 877,000 adults were in need of adult basic education services. That estimate and the estimate presented in this report were calculated in different ways. The estimate of 877,000 includes all adults in Massachusetts who have skills in the lowest literacy level of the National Adult Literacy Survey (NALS Level 1). In this report, we consider only the narrower group of nonelderly working-age adults (16-64 years old), but we include people who have skills in the lowest two levels of the National Adult Literacy Survey (NALS Level 1 and Level 2). (See Appendix B for a separate estimate of the eldetly in need of services.) In addition, the estimate of 877,000 was based solely on the NALS results. In this report, we include members of two other categories whom we also suggest are not sufficiently educated or trained for the New Economy based on findings from research on labor market outcomes. These categories include immigrants who have limited English speaking skills and people who lack a high school diploma or GED. In sum, the revisions adopted for this report allow for a much more detailed, reliable, and thotough representation of the size and nature of the problem.

certificate, and 30 percent of all 16–64-year-old immigrants in the state had not completed twelve years of schooling. On the other end of the educational spectrum, approximately one-third of the 16–64-year-old immigrants arriving in Massachusetts in the 1990s held a bachelor's or higher degree (or obtained one while residing in the U.S.) compared to only 22 percent of the immigrants who arrived in the U.S. prior to 1990.[8] These more-highly-educated immigrants should have more proficient English-speaking skills. The findings of the 2000 Census will be able to shed more light on this important set of issues since the monthly CPS household surveys do not capture any information on the English-speaking abilities of immigrants.

Given the increased diversity in the national origins of the immigrant population and the very limited share of recent immigrants from English-speaking countries, a relatively high share of the newer immigrants as well as many less-educated immigrants from earlier decades can be expected to have English-speaking deficiencies.[9] These language deficits will limit their ability to benefit from education and training programs and reduce their employability and earnings. Unfortunately, there is no current systematic body of evidence on the English-speaking proficiencies of the state's immigrant population. While the monthly CPS survey does capture information on the demographic and educational attainment backgrounds of immigrants, it does not collect any information on their English-speaking skills. The 1990 decennial Census did, however, collect such information from respondents in the long-form questionnaire. In the 1990 Census long-form questionnaire, each household was asked to identify the language that was spoken in their home. If the home language was other than English, the household was asked to identify the proficiency of each household member over age three in speaking English. The response categories were the following:

- Speaks English very well
- Speaks English well
- Does not speak English well
- Does not speak English at all

We have combined the latter two responses into one category: does not speak English well or does not speak English at all. In addition to those three categories, there is also a group of immigrants who only speak English. In Table 2.1, we have assigned each 16–64-year-old foreign immigrant residing in Massachusetts in 1990 into one of these four categories. There were an estimated 468,000 persons in this age group. Of the entire 16–64-year-old immigrant population, 22 percent reported that they only spoke English, another 35 percent claimed that they spoke English "very well," 21 percent said that they spoke English "well," and the remaining 21 percent either did not speak English well or did not speak any English.

The distribution of responses on the English-speaking proficiency question varied widely by age group. The older immigrants were most likely to be characterized by a bipolar distribution. Since more of the older immigrants (55 and older) had come from English-speaking countries or had improved their English-speaking skills since being here, more of them (30 percent) claimed to speak only English at home than each of the other age groups, especially young

TABLE 2.1

Self-Reported English Speaking Proficiencies of Foreign Born Residents of Massachusetts (16-64 Years Old) by Age Group, 1990 (n=468,360, Numbers in Percent)

Age Group	Does Not Speak English Well or Not at All	Speaks English Well	Speaks English Very Well	Only Speaks English
16-24	16.7	21.9	45.8	15.6
25-34	17.6	21.3	40.1	21.0
35-44	20.8	22.6	34.1	22.5
45-54	24.9	21.0	28.0	26.2
55-64	28.7	18.6	22.7	29.9
All 16-64	21.0	21.3	35.3	22.5

Source: 1990 Census, PUMS tapes, tabulations by Center for Labor Market Studies, Northeastern University.

2 See W. Neal Fogg, Andrew M. Sum with Sheila Palma and Paul Suozzo, *Population and Labor Force Developments in Massachusetts in the 1990s: Implications for the Labor Market and State Workforce Development Policy* (Boston: Report Prepared for the Massachusetts Institute for A New Commonwealth, 1998); Andrew M. Sum, Anwiti Bahuguna, et. al., *The Road Ahead: Emerging Threats to Workers, Families, and the Mastachusetts Economy* (Boston: Teresa and H. John Heinz III Foundation and MassINC, 1998).

3 These estimates are based on the findings of the 1990 Census and the U.S. Census Bureau's estimate of the state's resident population as of July 1, 1998.

4 In estimating net international migration, the U.S. Census Bureau treats persons born in Puerto Rico, Guam, the U.S. Virgin Islands, and other territories of the U.S. as immigrants since their arrival in the U.S. adds to the resident population count.

5 See the forthcoming report, Andrew M. Sum, Neeta Fogg, et. al., *The Northeast Region's Economy on the Eve of the New Millenium: Demographic, Labor Market, and Economic Challenges for the 21st Century*, Chapter 3 (Pittsburgh: Teresa and H. John Heinz Foundation, 2000).

6 See Andrew M. Sum, W. Neal Fogg, et.al, *The Changing Workforce: Immigrants and the New Economy in Massachusetts* (Boston: Massachusetts Institute for a New Commonwealth, 1999).

7 This estimate is based on an analysis of monthly CPS household surveys for the state over the January, 1996, to December, 1997, period. Persons arriving from Puerto Rico and territories of the U.S. were classified as immigrants.

8 See Sum and Fogg, *The Changing Workforce: Immigrants and the New Economy in Massachusetts.*

9 A number of well-educated immigrants from non-English-speaking countries have acquired English skills in their home countries, but their proficiencies cover a wide range of skills.

adults (only 16 percent of whom said they only spoke English). Yet, at the same time, the older groups of immigrants were most likely to report that they either did not speak English at all or spoke it poorly. The proportion of 1990 immigrants reporting little-to-no English-speaking proficiency ranged from a low of 17 percent for those in the 16-24 age group to a high of 29 percent for those in the 55-64 age group. (Table 2.1).

As expected, the self-reported English-speaking proficiencies of adult immigrants in Massachusetts also varied quite considerably by their level of schooling. The higher the level of educational attainment, the more likely that the respondent only spoke English and the less likely that he or she did not speak English well. (Table 2.2). The fraction of immigrants reporting that they only spoke English ranged from a low of 11 percent for those lacking a high school diploma or its equivalent to a high of 31 percent for those who completed one or more years of post-secondary schooling. At the other end of the proficiency spectrum, 38 percent of immigrants lacking a high school diploma reported either that they did not speak English well or did not speak English at all versus only 16 percent of those with a high school diploma and only five percent of those holding a bachelor's or more advanced academic degree.

The need for ESOL services will be most intense among those with limited formal schooling.

To identify the number of 16–64-year-old immigrants in Massachusetts who face a language challenge, we classified each 1990 immigrant into one of two needs categories:

- Those immigrants who reported that they spoke English "well." This is the equivalent of modest English-speaking skills; and
- Those immigrants who identified themselves as not speaking English at all or having poor English speaking proficiencies. This is the equivalent of limited English-speaking skills.

At the time of the 1990 Census, just under 100,000 immigrant residents ages 16–64 had only "modest" English-speaking skills and slightly over 96,000 had "limited" English-speaking proficiencies, yielding a grand total of 195,000 immigrants who may potentially seek ESOL instruction (Table 2.3). Between 1990 and 1997, approximately 25,000 new immigrants of all ages were arriving in Massachusetts each year. Given the growth in the immigrant population of the state since 1990 and the above average fraction of new immigrants lacking a high school diploma, the demand for both ESOL and ABE classes should be even higher today than it was in 1990.

As noted above, the need for ESOL services will be most intense among those with limited formal schooling. A recent *New York Times* article on the educational and English-speaking deficits of immigrant high school students in New York City highlights the need for such services.[10] Nationally and in our state, a high number of young adult immigrants have been Hispanic, and many of them obtained only limited schooling in their own countries. For example, in the late 1990s, a majority (60 percent) of the nation's 25–34-year-old Hispanic population were immigrants.[11] The share of these young Hispanic immigrants who lacked a high school diploma was nearly three times higher than that of native-born Hispanics (52 percent vs. 19 percent). The nation's and state's workforce development and adult basic education sys-

TABLE 2.2

The Self-Reported English Speaking Proficiencies of Foreign Born Residents of Massachusetts (16-64 Years Old) by Educational Attainment, 1990 (n= 462,920, Numbers in Percent)

Educational Attainment	Does Not Speak English Well or Not At All	Speaks English Well	Speaks English Very Well	Only Speaks English
12 Years or Less, no Diploma or GED	38.4	24.4	25.9	11.3
High School or GED	16.0	22.5	36.0	25.5
1-3 Years of College Including Associate's Degree	8.5	18.7	41.8	31.1
Bachelor's Degree or Higher	5.3	17.3	46.5	31.0

Source: 1990 Census public use tapes, tabulations by Center for Labor Market Studies.

10 See Karen W. Arenson, "Scaling the Barriers of Literacy and Language," *The New York Times*, March 11, 2000, pp. 1, 33.

11 See Andrew Sum, Neeta Fogg, Garth Mangum, with Sheila Palma, *Confronting the Youth Demographic Challenge: Current and Future Labor Market Prospects of Out-of-School Youth*, (Baltimore: Sar Levitan Center for Social Policy Studies, Johns Hopkins University, 2000).

TABLE 2.3

Estimated Number of 16-64 Year Old Immigrants in Massachusetts with Modest to Limited English-Speaking Proficiencies, 1990

Educational Attainment	Modest English-Speaking Skills	Limited English-Speaking Skills	Modest or Limited English-Speaking Skills
Lacks HS Diploma or GED	42,820	67,600	110,420
HS Diploma or Higher	56,160	28,820	84,980
All	98,980	96,420	195,400

Source: 1990 Census, public use tapes, tabulations by Center for Labor Market Studies.

TABLE 2.4

1990 Employment Rates of 16-64 Year Old Immigrants in Massachusetts in Selected Educational Attainment Groups, by English-speaking Proficiencies

Educational Attainment	Does Not Speak English Well or Not at All	Speaks English Well	Speaks English Very Well or Only Speaks English
HS Graduate, no College	47.4	68.9	71.0
1-3 Years of College Including Associate's Degree	55.5	65.9	73.3
Bachelor's Degree or Higher	55.5	73.8	82.1

Source: 1990 Census, public use tapes, tabulations by Center for Labor Market Studies.

tems have lagged considerably behind in addressing the language, literacy, and schooling deficits of this rapidly growing segment of the nation's and state's young adult population.

Language Skills of Massachusetts Immigrants and Their Labor Force and Earning Experiences

The ability to speak English well in today's labor market might well be expected to improve the employment and earnings prospects of immigrants. This is especially true in our state, where an above average share of jobs, and especially new jobs, are professional, managerial, and high level sales positions. A number of the simple statistical relationships between the English-speaking proficiencies of immigrants and their labor market experiences in Massachusetts in 1990 are displayed in Tables 2.4 and 2.5.[12] At the time of the 1990 Census, the employment rates of 16–64-year-old immigrants in each educational attainment group rose consistently with their self-reported level of English-speaking proficiencies.[13] Among high school graduates, the proportion of employed immigrants ranged from a low of 47 percent for those with limited English-speaking proficiencies to a high of 71 percent for those who spoke English very well or only spoke English. Even among bachelor degree holders, the employment rates for non-elderly immigrants ranged from a low of 56 percent among those with limited English-speaking proficiencies to 74 percent for those who spoke English well to a high of 82 percent for those who spoke English "very well" or spoke only English (Table 2.4).

The annual earnings of 16–64-year-old immigrants in Massachusetts also varied considerably by their level of schooling and their English-speaking proficiencies. Similar findings also have been found nationally, especially for young immigrants and employed male immigrants.[14] Among high school graduates with no post-secondary schooling, mean annual earnings of 16–64-year-old immigrants in 1989 ranged from a low of $6,067 for those who could not speak English to $13,600 for those who spoke English "well" to a high of $16,232 for those who only spoke English. Similar strong relationships prevailed among immigrants with some post-secondary schooling and those with bachelor degrees. Among the latter group, mean 1989 annual earnings varied from a low of $14,019 for those who could not speak English to $20,833 for those who spoke English "well" to a high of nearly $38,000 for those who only spoke English (Table 2.5).

These findings provide strong empirical support for the behavior of those immigrant parents who stressed to their children the importance of learning English to succeed in America. As Helen Zia, a second generation Chinese American, notes in her recent book *Asian American Dreams: The Emergence of An American People*, "My father wanted us to speak flawless English to spare us from the ridicule and the language discrimination he faced."[15] As she later noted at the end of her book, "My parents...raised six children, scratching out a living. Of their six children, there's a corporate manager, an entrepreneur, a writer, and three attorneys, one of whom—my sister—is also an engineer."[16] Strong language proficiencies and educational attainment of immigrants go hand in hand, and both together are powerful determinants of the earnings prospects of immigrants in today's labor markets. The formal schooling and language proficiencies of immigrant family heads are also critical determinants of the poverty status of immigrant families and their children. Family heads with more years of formal schooling and

12 Summaries of other research findings on the relationships between the English-speaking proficiencies of immigrants in Massachusetts and their earnings and poverty experiences can be found in the following monograph: Sum and Fogg, *The Changing Workforce: Immigrants and the New Economy in Massachusetts.*

13 The employment rate for any given group represents the proportion of the civilian non-institutional population in that group who were employed at the time of the 1990 Census, the early spring of 1990.

14 See Andrew M. Sum, *Literacy in the Labor Force* (Washington, D.C.: National Center for Education Statisrics, 1999). The economic payoffs in terms of higher annual earnings to higher literacy and numeracy proficiencies of immigrant males with 10 or more years of residency in rhe U.S. are the same as those for native-born males.

15 Helen Zia, *Asian American Dreams: The Emergence of An American People* (New York: Farrar, Straus, and Giroux, 2000), p. 8.

16 *Ibid*, p. 318.

TABLE 2.5

1989 Mean Annual Earnings of 16-64 Year Old Immigrants in Massachusetts in Selected Educational Attainment Groups by English-speaking Proficiencies

Educational Attainment	Does Not Speak English At All	Does Not Speak English Well	Speaks English Well	Speaks English Very Well	Only Speaks English
HS Graduate, No College	$6,067	$10,312	$13,600	$14,316	$16,232
1-3 Years of College Including Associate's Degree	$8,916	$9,917	$13,798	$15,225	$19,691
Bachelor's Degree or Higher	$14,019	$12,537	$20,833	$30,221	$37,811

Source: 1990 Census, public use tapes, tabulations by Center for Labor Market Studies.
Note: Findings include persons with zero reported earnings.

with strong English-speaking proficiencies are significantly less likely to be poor. There are, thus, strong personal and social economic benefits from improving the English-speaking, literacy, and quantitative proficiencies of immigrants. Those immigrants who earn more also pay more local, state, and federal taxes and are less dependent on cash and in-kind transfers to support themselves and their families.

A stronger base of English-speaking and literacy skills among immigrants in our state and across the nation would also contribute to a higher rate of citizenship among the nation's immigrants.[17] Naturalization applicants are required to speak, read, and write simple sentences in English in order to become citizens. While the test is somewhat subjective and is not a rigorous test of the applicant's literacy proficiencies, the absence of a strong base of English-speaking skills does reduce the incentive and desire to pursue citizenship.[18] Past national studies of the determinants of the decision to naturalize have found that immigrants with higher educational attainment, higher income, and higher skilled occupations, all else being equal, are significantly more likely to become naturalized citizens.[19] Our own analysis of naturalization rates among foreign born immigrants residing in Massachusetts in 1990 revealed that naturalization rates among immigrants 25 and older who have resided in the U.S. for at least six years varied quite considerably by years of schooling and self-reported English-speaking proficiency. Overall, 62 percent of the immigrant adults meeting our selection criteria had become naturalized citizens by the time of the 1990 Census. Naturalization rates of immigrant adults (25 and older)[20] in our state ranged from a low of only 30 percent for those persons with limited English-speaking skills who lacked a high school diploma to 59 percent for high school graduates who spoke English "well" to a high of 68 percent for bachelor degree holders who spoke only English.[21] Clearly, efforts to improve both the formal schooling and English-speaking proficiencies of immigrants could play a key role in strengthening the future naturalization rate, voter registration rate, and the political role of immigrants in the Commonwealth.[22]

An Education Credential Challenge: High School Dropouts

The educational group most adversely affected by changes in the Massachusetts labor market over the past two decades is that of high school dropouts. Those adults lacking a high school diploma or a GED certificate have been characterized by declining rates of labor force participation, lower aggregate employment rates, and reduced real weekly and annual earnings when employed.[23]

It would be helpful to know the numbers and demographic characteristics of Massachusetts residents who lack a high school diploma or a GED certificate. To derive estimates of the number and age characteristics of adults (18 and older) who do not hold a GED certificate or a regular high school diploma, we analyzed the findings of the monthly Current Population Surveys (CPS)[24] for Massachusetts for the following 36 month time period: January 1996 to December 1998.[25] (Table 2.6). On average over this 36 month period, there were 612,000 residents 18 and older who did not hold either a regular high school diploma or a GED certificate. This group represented 13.4 percent of the state's resident civilian non-institutional population ages 18 and older, excluding those youth still enrolled in high school.[26]

17 In the U.S. today, approximately one-half of those immigrants are eligible to become citizens. To be eligible, an applicant must be a legal resident, be at least 18 years old, have lived in the U.S. for at least five years, and pass a criminal background check. Rates of naturalization tend to vary by country of origin and distance from the U.S.

18 For a review of the naturalization test questions and procedures, See John J. Miller, *The Unmaking of Americans* (New Yotk: The Free Press, 1998); "Pressed by a Backlog of Applicants, the U.S. Is Rethinking Its Test for Citizenship, *The New York Times*, July 5, 1999, pp. A-1, A-19.

19 Philip Yang also finds that being married and having U.S. born children also raises the probability of becoming a naturalized citizen. See Philip Q. Yang, "Explaining Immigrant Naturalization," *International Migration Review*, 28 (3), Fall 1994, pp. 449-477.

20 To be eligible for citizenship, an applicant must be at least 18 years old. Also, since many young immigrants 18-24 are temporarily in the U.S. to attend college, we have excluded all persons under 25 from the analysis. The analysis also was restricted to those persons who migrated to the U.S. prior to 1985.

21 The concept "limited English-speaking" refers to those adults who reported that they either could not speak English at all or did not speak English well.

22 Findings of the NALS data base on voting behavior revealed that the likelihood of voting was significantly related to educational attainment and literacy proficiencies of adults.

23 For a recent assessment of the labor market experiences of the state's older workers (45-69 years old) by educational attainment, see Peter Doeringet, Andrew M. Sum, and David Terkla, *Older Workers: An Essential Resource for Massachusetts* (Boston:The Report of the Massachusetts Blue Ribbon Commission on Older Workers, 2000).

24 The Current Population Surveys are household surveys conducted each month to estimate the labor force status of the working age population in our state and in the country.

25 Until 1998, the U.S. Census Bureau did not distinguish GED holders from those adults possessing a regular high school diploma. Since January 1998, we can distinguish these two groups. Nationally, of the 66.085 million high school graduates (16+) with no post-secondary schooling, 6.380 million or nearly 10 percent reported that they held a GED certificate rather than a regular high school diploma.

26 Those persons who were inmates of jails or prisons or residents of nursing homes and long-stay hospitals are excluded from the count of the resident population. A small fraction of the 18-24 year old dropout population consists of youth who were still enrolled in high school but were not attending high school during the summer months.

TABLE 2.6

The Number and Percent of Persons 18 and Older in Massachusetts Who Lacked a High School Diploma or a GED Certificate, Total and by Age Group, 1996-98 Monthly Averages* (Numbers in 1000s)

Age Group	No. of Persons	Percent of Population
18-24	49.5	10.3
25-34	80.2	8.3
35-44	87.7	8.5
45-54	89.8	11.1
55-64	82.9	17.0
65+	222.3	28.6
All	612.4	13.4

** Population includes only those persons in the civilian non-institutional population who were not enrolled in high school.*

Source: January 1996 to December 1998 monthly CPS household surveys, tabulations by Center for Labor Market Studies.

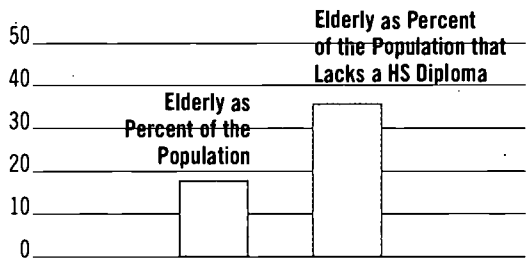
The fraction of the state's adults lacking a high school diploma or a GED certificate varied considerably by age group, ranging from lows of 8 to 9 percent for those residents between 25 and 44 years of age to highs of 17 percent for those 55-64 and nearly 29 percent for elderly residents (65 and older). The oldest age groups in Massachusetts were much less likely to have graduated from high school. As a result, the elderly population accounted for an above average share of the state's dropout population. On average, over the 1996-98 period, there were 222,000 elderly residents who lacked a high school diploma. While the elderly accounted for only 17 percent of the state's 18 and older population, they represented 36 percent of the school dropout population (Figure 2.1). Since few elderly dropouts are active participants in the state's labor market and are the least likely to cite a desire for immediate employment, they will not comprise a major segment of those seeking ABE, GED preparation, or English classes in the near future.

The educational group most adversely affected by changes in the Massachusetts labor market over the past two decades is that of high school dropouts.

The 390,000 school dropouts between the ages of 18 and 64 should be viewed as a more appropriate target group for future ABE classes geared to workforce development rather than focusing on the general population of dropouts. To avoid duplication in the estimated universe of need for ABE and ESOL instruction, we have re-estimated the number of 16–64-year-old high school dropouts to eliminate those who also have limited English speaking skills and thus have already been counted in the previous section's estimate. At the time of the 1990 Census, 110,000 of the immigrants with limited English-speaking proficiencies were high school dropouts. If we exclude those immigrants with limited English speaking skills who also lack a high school diploma or a GED certificate, our new total is 280,000 high school dropouts.

FIGURE 2.1

Massachusetts Residents 65 and Older As a Percent of the Population Compared to the Percent of the Population That Lacks a High School Diploma or GED, 1996-98. Monthly Averages



Source: January 1996–December 1998 monthly CPS household surveys, tabulations by Center for Labor Market Studies.

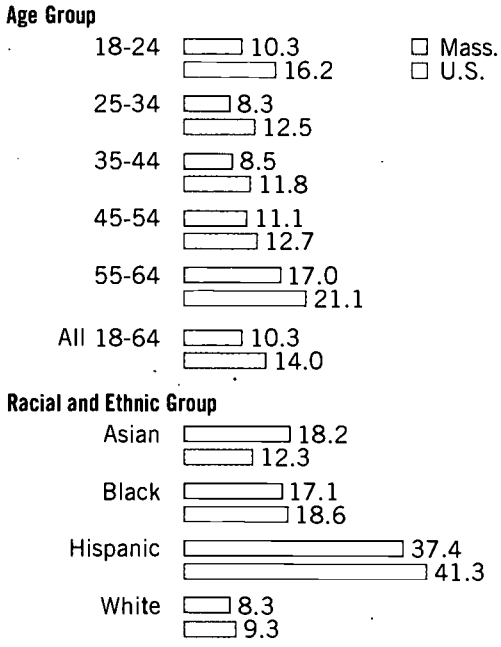
The Massachusetts adult population outperforms the nation on most key indicators of educational attainment, especially the fraction of the adult population with a bachelor's or higher degree.[27] For the entire 18–64-year-old population, only 10 percent of state residents had not obtained a regular high school diploma or a GED certificate as compared with 14 percent of U.S. residents (Figure 2.2). For members of each of the five age subgroups, Massachusetts residents were less likely than their national counterparts to lack a high school diploma or a GED certificate. Similar to findings for the nation as a whole, school dropout rates among Massachusetts adults varied quite considerably across racial and ethnic groups, ranging from a low of 8 percent for white, non-Hispanics to a high of 37 percent for Hispanics. Still, given the race-ethnic composition

27 Over the 1996-98 period, nearly 33 percent of the state's 18 – 64 year old population held a bachelor's or higher degree compared to only 24 percent for the U.S. as a whole. These advantages in bachelor degree attainment rates prevailed among men and women and among adults in each age group.

of the state, a substantial majority (73 percent) of the state's adults lacking a high school diploma or GED were white, non-Hispanics. Black, Hispanic, and white Massachusetts residents were modestly less likely than their national counterparts to lack a high school diploma or a GED, but Asian residents (a high fraction of whom are immigrants) were more likely than their U.S. peers to have left school before acquiring a diploma or a GED certificate (18 percent versus 12 percent). Massachusetts Asian adults, however, were more likely than their U.S. counterparts to have obtained a bachelor's or higher degree (42 percent vs. 40 percent) and had the highest bachelor degree attainment rate in the state exceeding that of white, non-Hispanics by eight percentage points.

FIGURE 2.2

Percent of Massachusetts and U.S. Residents 18-64 Years Old Who Lacked A High School Diploma or a GED, by Age and Racial and Ethnic Group, 1996-98 Averages



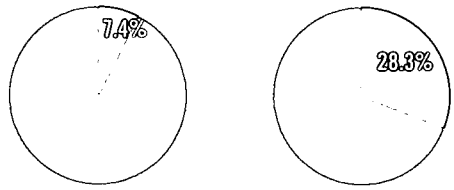
Source: January 1996–December 1998, monthly CPS household surveys.

Immigrants and the High School Dropout Population

Many immigrants face dual challenges of limited English speaking skills and limited education. An above-average share of adult immigrants arrive in the state with limited formal schooling, and they account for a disproportionate share of the state's adult dropouts. During recent years, 151,000 of the state's 390,000 adult dropouts (18–64 years old) were immigrants, accounting for nearly 4 of every 10 dropouts in the state. The incidence of school dropout problems among immigrants in Massachusetts was nearly four times higher than that among native-born workers (Figure 2.3).

FIGURE 2.3

Number and Percent of Massachusetts Residents 18-64 Who Lacked a High School Diploma or a GED Certificate by Nativity Status, 1996-98 Monthly Averages



* Foreign born include persons born in Puerto Rico and other territories of the U.S.

Source: January 1996–December 1998 monthly CPS surveys, tabulations by Center for Labor Market Studies.

The absence of a high school diploma or GED certificate among immigrants had substantial labor market consequences. Immigrant dropouts were considerably less likely to actively participate in the labor force, encountered higher rates of unemployment, and had much lower employment rates than their better educated counterparts. During the late 1990s, only 44 of every 100 immigrant adults lacking a high school diploma or GED were employed versus 65 percent of high school graduates, and nearly 76 percent of four-year college graduates (Figure 2.4). Employed immigrants lacking a high school diploma had considerably lower annual earnings and were much more likely to be economically disadvantaged.

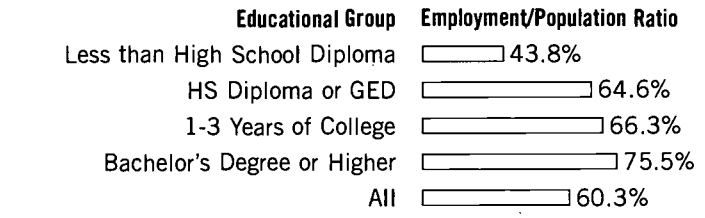
The absence of a high school diploma among native-born adults in Massachusetts also had substantial negative consequences for their labor market success. In 1996-97, only 38 of every 100 working-age residents (16+) who lacked a high school diploma were employed during a typical month. (Figure 2.5). This employment rate was 22 percentage points lower than that of high school graduates and 45 percentage points lower than that of bachelor degree recipients. Thus, the state's school dropout population, both

28 For further discussions of the putposes, nature, and design of the 1992 National Adult Literacy Survey, see Irwin S. Kirsch, Ann Jungeblut, Lynn Jenkins, and Andrew Kolstad, *Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey* (Washington, D.C.: National Center for Education Statistics, U.S. Department of Education, 1993); Sum, *Literacy in the Labor Force.*

29 See Irwin Kirsch and Ann Jungeblut, *Literacy: Profiles of America's Young Adults–Final Report*, National Assessment of Educational Progress, Ptinceton, 1988; Irwin S. Kirsch, Ann Jungeblut and Anne Campbell, *Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor*, Educational Testing Service, Princeton, 1992.

FIGURE 2.4

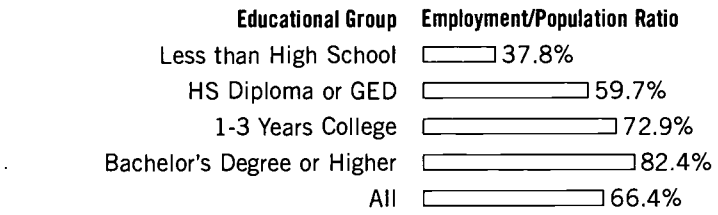
Civilian Employment/ Population Ratios of Foreign Born Persons (16+) in Massachusetts by Educational Attainment, 1996-1997 (Monthly Averages)



Source: January 1996–December 1997 monthly CPS surveys, tabulations by Center for Labor Market Studies.

FIGURE 2.5

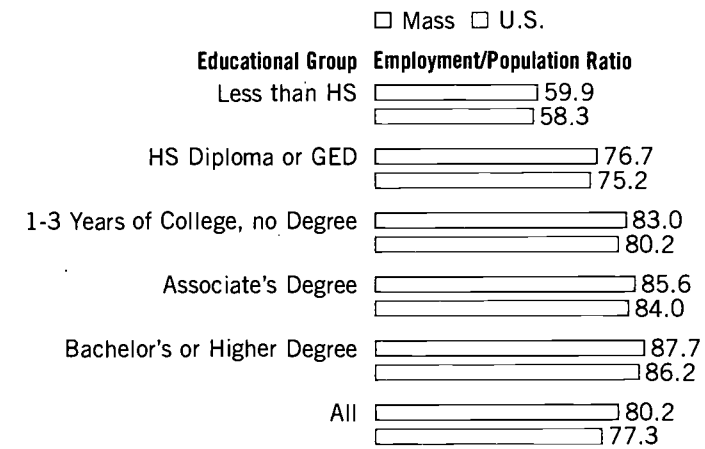
Employment/Population Ratios of Native-Born Working-Age Residents of Massachusetts (16+) by Educational Attainment, 1996-97 (in Percent)



Source:January 1996 to December 1997 CPS surveys, tabulations by Center for Labor Market Studies.

FIGURE 2.6

Comparisons of the Employment/Population Ratios of Adult Workers 18-64 Years Old In the State of Massachusetts and the U.S. by Educational Attainment, 1998-99 (Monthly Averages)



** Findings for both the state and the nation exclude 18-24 year old students. Source: January 1998–December 1999 CPS surveys, tabulations by Center for Labor Market Studies.*

native born and immigrant, contains a potential pool of workers that could be helped to become more employable and productive participants in the current labor shortage economy.

Among those 18-64 years of age, employment rates among dropouts were well below the state average and were the lowest by far among all educational attainment subgroups. Over the 1998-99 period, only 60 percent of the state's 18-64 year old dropout population were employed (Figure 2.6). This employment rate was 20 percentage points below the state average (80 percent) for all 18-64 year old residents, a finding nearly identical to that for the U.S. Adult, non-elderly high school dropouts in Massachusetts had an employment rate 17 percentage points below that of high school graduates and 26 percentage points below that of community college graduates.

A New Literacy Challenge: Low-Skilled Workers Who Have a High School Diploma

The 1992 National Adult Literacy Survey (NALS) was an outgrowth of the Adult Education Amendments of 1988, in which the U.S. Congress called upon the U.S. Department of Education to issue a formal report containing definitions of literacy and providing estimates of the extent of literacy among the nation's adults.[28] In conducting the literacy assessment for the U.S. Department of Education, the Educational Testing Service (ETS) adopted the following definition of literacy:

> *"Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential."*

Three separate literacy scales were used by the Educational Testing Service (ETS) to assess the proficiencies of each adult respondent (16 and older). These literacy scales (prose, document, and quantitative) were the same as those used by ETS in conducting earlier assessments of the literacy proficiencies of the nation's young adult population and clients for several U.S. Labor Department programs.[29] A brief definition of the general nature of the literacy tasks and specific examples of the tasks underlying each of these three scales is displayed in Figure 2.7.

FIGURE 2.7

Definitions of the Literacy Tasks and Skills Underlying Each of the Literacy Scales

Prose Literacy: The knowledge and skills needed to understand and use information from texts that include editorials, news stories, poems, and fiction. For example, finding a piece of information in a newspaper article, interpreting instructions from a warranty, inferring a theme from a poem, or contrasting views expressed in an editorial.

Document Literacy: The knowledge and skills required to locate and use information contained in materials that include job applications, payroll forms, transportation schedules, maps, tables, and graphs. For example, locating a particular intersection on a street map, using a schedule to choose the appropriate bus, or entering information on an application form.

Quantitative Literacy: The knowledge and skills required to apply arithmetic operations, either alone or sequentially, using numbers embedded in printed materials. For example, balancing a checkbook, figuring out a tip, completing an order form, or determining the amount of interest from a loan advertisement.

Each participant in the assessment (a total of 26,091 adults including a national sample of prison inmates participated in the testing) was assigned an estimated proficiency score for each of the three scales based on his or her performance on the assigned set of literacy tasks and their background traits. The scores on each of the scales could range from 0 to 500 although few individuals fell on the extreme ends of these proficiency score distributions. For example, fewer than two percent of the nation's adults had an estimated prose proficiency score less than 100 and somewhat under one percent had an estimated prose proficiency greater than 400. The average scores of the entire national sample of respondents on the three scales were as follows:[30]

- Prose 272
- Document 267
- Quantitative 271

Based on their proficiency scores, respondents were placed into one of five levels where Level 1 represents the lowest proficiency category and Level 5 the highest proficiency category (Table 2.7). Level 1 proficiency covers those individuals with estimated test scores in the 225 or less category while Level 5 includes those individuals with test scores in the 376 and higher category. We have classified those adults in Level 1 as having "very limited to highly deficient" proficiencies, those in Level 3 as "moderate to adept," and those in Level 5 as "highly proficient."

The National Governors' Association (NGA) has established "Level 3" as the standard for being considered "fully literate" in today's world. For the entire U.S. labor force in 1992, approximately 15 percent had proficiencies in Level 1, 25 percent fell into Level 2, 56 percent placed in Levels 3 and 4, and only 4 to 5 percent achieved a Level 5 competency, the highest proficiency category. Thus, using NGA's standard for "fully literate" only 60 percent of the members of the U.S. labor force would have met this standard in 1992 although the fraction doing so varied quite widely by age, educational attainment, race-ethnic group, and occupation.[31] Persons outside of the labor force (i.e., neither working nor actively looking for work) tended to score far more poorly on the literacy assessment. National estimates indicate that between 65 and 70 percent of those adults outside of the labor force would have fallen into Level 1 or Level 2 on each of the three scales.[32] Older people also tend to score lower as well. Between 80 and 90 percent of the elderly (65+) members of the inactive pool would have been categorized in Level 1 or Level 2 on each of the three scales.

While many of the nation's adults were found to have limited prose, document, and quantitative proficiencies, it is inappropriate to classify most of those in Levels 1 or 2 as illiterate. By most past historical standards of literacy, such as the ability to sign one's name, read very short passages of text, or correctly add well-specified sets of numbers, the vast majority of the adult population, and, especially the nation's civilian labor force, would be classified as literate. For example, 99 percent of the labor force were capable of signing their name, 96 percent could identify a country in a short article, 93 percent could correctly total items on a bank deposit slip, and 90 percent could locate a specific piece of information in a sports-related article.[33]

However, many adults could not successfully complete more complex literacy tasks on the three scales, such as those involving interpreting text from longer articles or stories, making inferences from texts, writing letters to explain the source of errors in a credit card bill, interpreting data embedded in charts and graphs, making calculations involving multiple steps and using data from multiple sources, or summarizing

30 The standard deviations for each of these three scales ranged from 63 points for the prose and document scales to 66 points on the quantitative scale. The distributions of scores for the population are approximately normal although low scores of poorly educated immigrants create a left tail skewness of the distribution.

31 For more detailed findings on the distribution of key subgroups of the labor force across the five scales, see Sum, *Literacy in the Labor Force*, especially Chapters Two and Three.

32 See Sum, *Literacy in the Labor Force*, "Table 1-7", p. 35.

33 Having a proficiency level capable of "perfotming the task" implies that the individual could successfully complete tasks at this difficulty level at least 80 percent of the time.

and comparing/contrasting views expressed in a story or editorial. The steep drop in the estimated fraction of the nation's labor force with prose proficiencies capable of successfully completing more complex tasks is shown in Table 2.8 below. While 96 percent of the members of the civilian labor force could correctly identify the name of a country cited in a short newspaper article, only one percent had a proficiency level capable of accurately summarizing two ways in which a lawyer could challenge prospective jurors after reading an article on standard jury operations.

TABLE 2.7

The Range of Test Scores Defining Each Level of Literacy Proficiency

Level	Test Score Range	Proficiency Rating
One	225 or Less	Very limited to highly deficient
Two	226-275	Very limited to moderate
Three	276-325	Moderate to adept
Four	326-375	Adept to highly proficient
Five	376+	Highly proficient

The main literacy problem of U.S. workers is not that of illiteracy in the traditional sense. Instead, it is a problem of limited skills that restrict workers' ability to perform higher skilled jobs and take on the more complicated duties that are required of workers in the New Economy.[34] Findings of the 1992 NALS survey revealed that a substantial fraction of front-line, blue-collar workers (skilled, semi-skilled, and unskilled) in the nation's key goods producing industries had low literacy and numeracy proficiencies. Sixty-two percent of such workers had prose proficiencies in Levels 1 and 2 and 53 percent had quantitative proficiencies in Levels 1 and 2.[35] Higher prose and quantitative proficiencies of blue-collar workers were positively associated with higher weekly and annual earnings. For example, a one standard deviation increase in the quantitative proficiencies of full-time craft workers, all else being equal, would raise their expected weekly earnings by 10 percent. For workers in professional and management-related occupations, this one standard deviation increase in prose or quantitative skills would raise their weekly earnings by 15 percent.

The attainment of prose and quantitative proficiencies at Level 3 or higher strongly raises the prospects that a worker will gain employment in the more highly skilled, higher growth professional, managerial, and technical occupations. Among all of the nation's employed in 1992, only 5 percent of workers with Level 1 prose skills were employed in such occupations versus 25 percent of those in Level 3 and 72 percent of those in Level 5. (Table 2.9). The positive statistical relationship between prose proficiencies and access to professional, managerial, or technical employment also held true for workers in each educational attainment category, including high school graduates, those with one to three years of post-secondary schooling, and bachelor degree recipients. Among those workers with one to three years of college but no formal degree, the fraction holding jobs in professional, managerial, and technical occupations rose from only 9 percent for those in Level 1 to 21 percent for those in Level 3 to a high of 44 percent for those in Level 5.

34 For an overview of the features of these high performance work organizations, their growth in the 1990s, and their impact on worker pay, see Paul Osterman, *Securing Prosperity* (Princeton: Princeton University Press, 1999); Paul Osterman, "Work Reorganization in An Era of Restructuring: Trends in Diffusion and Effects on Employee Welfare," *Industrial and Labor Relations Review*, 53(2), January 2000, pp. 179-196.

35 Sixty-one percent of such front-line workers had document proficiencies in Levels 1 and 2. See Sum, *Literacy in the Labor Force*, "Table 3-9," p. 85.

TABLE 2.8

The Nature of the Literacy Tasks at Various Difficulty Levels on the Prose Scale

Proficiency Level/ Difficulty Level	Task	% of Labor Force With This Proficiency
LEVEL 1		
Difficulty Level 149	Identify country in short article	96%
Difficulty Level 210	Locate one piece of information in sports article	90%
LEVEL 3		
Difficulty Level 288	Write a brief letter explaining error made on credit card bill	52%
Difficulty Level 316	Read lengthy article to identify two behaviors that meet a stated condition	32%
LEVEL 5		
Difficulty Level 382	Compare approaches stated in narrative on growing up	4%
Difficulty Level 410	Summarize two ways lawyers may challenge prospective jurors	1%

TABLE 2.9

Percent of Employed Adults Holding Jobs in Professional, Management, and Technical Occupations by Educational Attainment and Prose Proficiency Level, U.S., 1992

	NALS Level					
Educational Attainment	1	2	3	4	5	All
9 to 12 Years, no Diploma	2	7	6	11	—	4
High School Diploma or GED	6	9	10	12	15	9
1-3 Years of College, no Degree	9	17	21	29	44	22
Associate's Degree	28	29	37	43	41	38
Bachelor's or higher degree	46	56	64	75	83	71
All workers	5	14	25	50	72	27

Source: 1992 NALS survey, tabulations by Center for Labor Market Studies

The Literacy and Numeracy Proficiencies of Massachusetts Workers

While the National Adult Literacy Survey offers comprehensive evidence on the literacy and numeracy proficiencies of the nation's entire adult population and the employed population, it is not capable of providing comparable information for the residents or workers of Massachusetts. At a cost of approximately $365,000, twelve individual states chose to supplement the national sample to obtain statistically representative results for their own states, but neither Massachusetts nor any other New England state agreed to participate in the State Adult Literacy Survey (SALS).[36] A series of synthetic estimates of the percent of each state's residents scoring at Levels 1 and 2 on the composite proficiency scale (prose and document and quantitative skills combined) have been produced by the National Institute for Literacy.[37] According to the estimate for Massachusetts, 16 percent of state residents had a NALS composite proficiency score in Level 1, with the state ranking 30th highest on this measure among the 50 states and the District of Columbia. While the statewide synthetic estimate may be fairly accurate, by itself it does not provide useful information for planning adult basic education classes, because we cannot identify different subpopulations within the state with inadequate proficiencies. The estimate of the percent of adults with a Level 1 proficiency pertains to all adults, including many elderly residents (65+) and non-participants in the labor market, many of whom have marginal to no interest in improving their literacy skills.

> The main literacy problem of U.S. workers is not that of illiteracy in the traditional sense. Instead, it is a problem of limited skills that restrict workers' ability to perform higher skilled jobs and take on the more complicated duties that are required of workers in the New Economy.

To obtain a more disaggregated and insightful set of estimates of the literacy proficiencies of the state's full-time workers, we combined the findings of the national NALS survey on the prose and quantitative proficiencies of the full-time employed by educational attainment with recent CPS household survey data on the educational attainment of the full-time employed in Massachusetts. An analysis of these two sets of data together with a set of assumptions about the proficiencies of Massachusetts full-time workers are used to generate estimates of the number and percent of Massachusetts workers with prose and quantitative proficiencies in Levels 1 and 2.

The estimated percent of U.S. full-time workers in each educational attainment subgroup in 1992 with prose or quantitative proficiencies at Level 1 or Level 2 are displayed in Table 2.10. For all full-time workers regardless of schooling, 13 percent had prose proficiencies in Level 1, and another 24 percent were estimated to have prose proficiencies at Level 2. The percent of full-time workers with Level 1 or Level 2 prose proficiencies was estimated to be 37 percent. (Table 2.10). The combined share of full-time workers with Level 1 or Level 2 prose proficiencies varied quite considerably by their educational attainment, ranging from highs of 94 percent for those with only a primary school education and 75 percent for high school dropouts to a low of 10 percent for bachelor degree recipients. Very similar patterns prevailed on the quantitative scale. Thirty-six percent of the full-time employed in 1992 had Level 1 or Level 2 quantitative skills, and the share with such limited quantitative proficiencies ranged from a high of 92 percent for those with 0 to 8 years of schooling to a low of 10 percent for those with a bachelor's or higher degree.

Members of the Massachusetts labor force tend to be better educated than their U.S. counterparts, with more state residents holding a bachelor's or advanced degree. Over the 1998-99 period, only 8 percent of full-time employed workers in Massachusetts lacked a high school diploma or a GED certificate while 8 percent held an associate's degree and just under 38 percent were graduates of four-year colleges and universities. Given the higher levels of formal schooling

36 An analysis by the Center for Labor Market Studies of the composite test scores of the entire sample of respondents from New England revealed that the mean composite test score was only 12 points or less than one-tenth of a standard deviation above that for the entire U.S. The findings for New England, however, are not necessarily representative of all adults in the region, given the natute of the sample design.

37 For these synthetic estimates, see Steve Reder, *The State of Literacy in America.* (Washington D.C.: National Institute for Literacy, 1998).

TABLE 2.10

Percentage Distribution of Full-Time Employed Workers in the U.S. Across the Prose and Quantitative Proficiency Scales by Educational Attainment, 1992

Prose Scale	% in Level 1	% in Level 2	% in Level 1 or 2
All	13	24	37
0-8 Years	73	21	94
9-12 Years, no Diploma or GED	35	40	75
High School Diploma or GED	13	35	48
1-3 Years College, no Degree	5	22	27
Associate's Degree	3	17	20
Bachelor's or Higher Degree	2	8	10
Quantitative Scale			
All	13	23	36
0-8 Years	73	19	92
9-12 Years, no Diploma or GED	36	37	73
High School Diploma or GED	13	31	44
1-3 Years College, No Degree	6	21	27
Associate's Degree	4	16	20
Bachelor's or Higher Degree	1	9	10

Source: Andrew M. Sum, Literacy in the Labor Force, 1999.

TABLE 2.11

Distribution of Full-Time Employed Workers (16+) in Massachusetts by Educational Attainment, 1998-99*

(24 Month Averages, Numbers in 1000s)

Educational Attainment	Number	Percent
All	2168.8	
0-8 Years	63.6	2.9%
9-12 Years, no Diploma or GED	117.8	5.4%
High School Diploma or GED	679.1	31.3%
Some Post-Secondary, no Degree	323.5	14.8%
Associate's Degree	168.7	7.8%
Bachelor's Degree or Higher	816.2	37.6%

** Findings restricted to those at work during the survey week.*
Source: January 1998 to December 1999 CPS public use tapes, tabulations by Center for Labor Market Studies.

among Massachusetts full-time workers, one would expect them to have somewhat higher prose and quantitative proficiencies than their employed counterparts across the country. To estimate the number and share of Massachusetts full-time workers in 1998-99 with prose and quantitative proficiencies in Levels 1 or 2, we multiplied the number of full-time workers in our state in each of six educational attainment categories shown in Table 2.10 by the percent of national full-time workers in each educational category with Level 1 or Level 2 prose and quantitative proficiencies. Table 2.11 shows the distribution of the educational attainment of full-time workers in Massachusetts.

The key underlying assumption in our analysis is that the distribution of prose and quantitative proficiencies among Massachusetts full-time workers in 1998-99 within each of the six educational attainment groups is identical to that of their U.S. counterparts as measured in 1992 by the NALS survey. Since average proficiencies within educational attainment groups change only slowly over time and the NALS 1992 findings for the New England region were quite close to those for the nation, we believe these assumptions are quite reasonable.

Estimates of the number and percent of Massachusetts full-time workers with Level 1 and Level 2 proficiencies in prose and quantitative skills are displayed in Table 2.12. For the prose scale, our estimates indicate that 213,500 full-time workers in Massachusetts likely had Level 1 proficiencies, representing just under 10 percent of all full-time workers in the state over the 1998-99 period. Another 463,200 full-time workers are estimated to have had prose proficiencies in Level 2. The combined number of full-time workers with Level 1 or Level 2 prose proficiencies was 676,700, representing 31 percent of all full-time employed persons (16+) in the state.

Very similar but modestly lower findings prevail for quantitative proficiencies. Our estimates suggest that 211,400 full-time workers had Level 1 quantitative proficiencies and another 434,400 had Level 2 proficiencies, yielding a combined total of just under 646,000 (Table 2.12). This group represented 29.7 percent of all full-time workers in the state during the 1998-99 period.

TABLE 2.12

Estimated Number and Percent of Full-Time Workers in Massachusetts with NALS Prose and Quantitative Proficiencies at Levels 1 or 2 by Educational Attainment, 1998-99 Averages

Scale/Educational Attainment	Level 1 (in 1000s)	Level 2 (in 1000s)	Level 1 or Level 2 (in 1000s)	% of Full-Time Workers In Group with Level 1 or 2 Proficiency
Prose				
0-8 Years	46.4	13.3	59.7	94.0
9-12 Years, no Diploma or GED	41.2	47.1	88.3	75.0
High School Diploma or GED	88.3	237.6	325.9	48.0
1-3 Years College, no Degree	16.2	71.2	87.4	27.0
Associate's Degree	5.1	28.7	33.8	20.0
Bachelor's or Higher Degree	16.3	65.3	81.6	10.0
Total	213.5	463.2	676.7	31.2
Quantitative				
0-8 Years	46.4	12.0	58.4	91.8
9-12 Years, no Diploma or GED	42.4	43.6	86.0	73.0
High School Diploma or GED	88.3	210.5	298.8	44.0
1-3 Years College, no Degree	19.4	67.9	87.3	27.0
Associate's Degree	6.7	27.0	33.7	20.0
Bachelor's or Higher Degree	8.2	73.4	81.6	10.0
Total	211.4	434.4	645.8	29.7

The above estimates of the combined number of full-time employed persons with Level 1 or Level 2 proficiencies includes individuals from every part of the educational spectrum including those with only a primary education as well as those with a bachelor's degree. To avoid duplication in the estimated universe of potential need for adult basic education instruction, we reestimated the number of full-time workers with Level 1 and Level 2 prose and quantitative proficiencies, excluding all workers without a regular high school diploma or a GED certificate. (Table 2.13).

On the prose scale, our estimates indicate that 126,000 full-time workers with at least a high school diploma had Level 1 prose proficiencies, accounting for 6.3 percent of all full-time workers with such schooling and 529,000 or 27 percent had either Level 1 or Level 2 prose proficiencies.[38] Very similar findings apply in the case of quantitative proficiencies. Approximately 123,000 full-time workers with at least a high school diploma had Level 1 quantitative proficiencies and slightly more than one-half million had Level 1 or Level 2 quantitative proficiencies, represent-

TABLE 2.13

Estimated Number and Percent of Massachusetts Full-Time Workers with Level 1 or Level 2 Proficiencies in Prose and Quantitative Skills, 1998-99 (Numbers in 1000s)

Scale/Educational Group	Level 1	Percent in Level 1	Level 2	Percent in Level 2	Level 1 or 2	Percent in Level 1 or Level 2
Prose						
All	213.5	9.8	463.2	21.3	676.7	31.1
HS Graduates and Beyond	125.9	6.3	402.8	20.2	528.7	26.6
Quantitative						
All	211.4	9.7	434.4	20.0	645.8	29.8
HS Graduates and Beyond	122.6	6.2	378.8	19.0	501.4	25.2

38 Excluding the elderly full-time employed and 16-24 year old full-time employed students from the totals would reduce the number to slightly below 500,000.

TABLE 2.14

Mean Weekly Earnings of Full-Time Workers in the U.S. by Educational Attainment and Quantitative Proficiency Score on the NALS Assessment, 1992

Educational Attainment	Level 1	Level 2	Level 3	Level 4	Level 5
All	$330	$438	$533	$684	$913
High School Diploma, no College	$337	$412	$449	$479	$559
Some Post-Secondary, no Degree	$344	$451	$480	$602	$637
Associate's Degree	$396	$469	$577	$616	$654
Bachelor's Degree or Higher	—	$610	$731	$865	$1,031

— implies fewer than 30 sample observations in this cell.
Source: Andrew M. Sum, Literacy in the Labor Force, "Table 4-3," p. 117

ing 25 percent of the full-time employed.

The strength of the prose and quantitative proficiencies of full-time workers in the U.S. had profound impacts on their weekly and annual earnings from employment in 1992. This relationship between quantitative proficiencies and weekly earnings also held true for workers in each educational attainment category. Both a person's skills and educational attainment matter in terms of that person's earnings.

The mean weekly earnings of all full-time workers in the U.S. in 1992 varied from a low of $330 for those with a Level 1 proficiency in quantitative skills to $533 for those in Level 3 to a high of $913 for those in Level 5. (Table 2.14). Within each proficiency category, those workers with more years of formal schooling earn higher weekly earnings; however, there are large economic payoffs to higher quantitative skills within each schooling category. For example, among high school graduates, full-time workers with Level 3 proficiencies had mean weekly earnings of $449, or one-third higher, than those with Level 1 proficiencies, and high school graduates with Level 5 quantitative proficiencies earned $559 per week, or 24 percent more than their counterparts with mid-level proficiencies. High school graduates and high school dropouts with stronger prose and quantitative proficiencies also are more likely to be full-time workers, to work more weeks and hours during the year, to earn higher annual incomes, and to avoid problems of poverty and welfare dependency. Since they obtain higher earnings, they pay more federal and state income taxes and social security payroll taxes, and they are less likely to receive Medicaid subsidies, food stamps, or rental housing subsidies from the federal or state government. Thus, the nation's and state's taxpayers also benefit from a more fully literate workforce.

Both a person's skills and educational attainment matter in terms of that person's earnings.

The Literacy Proficiencies of the Part-Time Employed, the Unemployed, and Those Adults Not Active in the Labor Force

The preceding sections assessed the literacy and quantitative proficiencies of the state's full-time employed population. There are several other labor force groups whose literacy needs also need to be examined, including the part-time employed and the unemployed. The literacy proficiencies of the pool of working-age residents not currently active in the labor force also should be assessed since this population subgroup contains individuals who, if their skills were upgraded, might enter the labor force and help address existing and impending labor shortages throughout the state.[39]

The findings of the 1992 National Adult Literacy Survey can be used to identify the prose, document, and quantitative proficiencies of the part-time employed, the unemployed, and those adults not active in the labor force. In this section, we will concentrate on the prose proficiencies of each of these three subgroups, identifying the national percent of persons in each group who were only able to achieve Level 1 or 2 proficiencies and, thus, could benefit from adult education programs. The national results indicated that the part-time employed had a mean prose proficiency score (284) that was statistically identical to that of the full-time employed (287), but fared modestly less well than their full-time counterparts on the document and quantitative proficiencies.[40] Typically, those women

39 Each month, the CPS survey collects information on the current job desires of persons not active in the labor force. We refer to these individuals as the labor force reserve. During 1998-1999, on average, there were approximately 75,000 persons (16 and older) in Massachusetts who were not actively looking for work, but reported a desire for current employment.

40 See Sum, *Literacy in the Labor Force*, Chapters 1 and 2.

TABLE 2.15

Percent of Employed Part-time Workers with Level 1 or Level 2 Prose Proficiencies, by Educational Attainment, U.S., 1992

Educational Attainment	Level 1	Level 2	Level 1 or 2
0-8 years	69.3	25.9	95.2
9-12 years, no diploma	23.4	35.4	58.8
HS diploma or GED, no college	12.2	33.0	45.2
1-3 years college, no degree	3.5	19.6	23.1
Associate's degree	1.6	17.1	18.7
Bachelor's or higher degree	1.9	6.8	8.7
Total	14.2	25.7	39.9

Source: 1992 National Adult Literacy Survey, tabulations by Educational Testing Service for Center for Labor Market Studies, Northeastern University.

TABLE 2.16

Estimated Numbers of Employed Part-Time Workers in Massachusetts with Prose Proficiencies in Levels 1 or 2 by Educational Attainment, 1998-99

Educational Attainment	Number (in 1000s)
0-8 years	26.2
9-12 years, no diploma	67.5
High school diploma or GED, no college	112.8
1-3 years college, no degree	38.0
Associate's degree	13.8
Bachelor's or higher degree	20.9
Total	279.2
Less all Persons lacking a diploma	93.7
Subtotal 1	185.5
Less all 16-24 year old students	45.2
Subtotal 2	140.3
Less elderly persons (65+) with at least a HS diploma	14.0
Subtotal 3	126.3

Source: Monthly CPS surveys, 1998-99, tabulations by Center for Labor Market Studies, Northeastern University.

who worked part-time in 1992 had identical scores as full-time employed women; however, part-time employed men were not as proficient as their full-time male counterparts, especially on the quantitative scale. The difference between the mean quantitative scores of full-time and part-time employed men was nearly 20 points, or one-third of a standard deviation.[41]

The Part-Time Employed

The percentage distribution of the part-time employed by proficiency level on the prose scale reveals that 14 percent were only able to achieve a Level 1 proficiency, and another 26 percent only had a Level 2 proficiency (Table 2.15). Just under 40 percent of the nation's part-time employed had either a Level 1 or Level 2 prose proficiency. The prose test score performance of the nation's part-time employed varied quite markedly by educational attainment. The share of part-time workers with a Level 1 or 2 prose proficiency ranged from highs of 95 percent for those with only a primary school education and 59 percent for those with some high school to a low of just under 9 percent for those with a bachelor's or higher degree.

To estimate the number of Massachusetts part-time workers with Level 1 or 2 prose proficiencies, we first identified the educational backgrounds of the state's 870,000 part-time employed during calendar years 1998 and 1999.[42] Between 8 and 9 percent of these part-time workers were nonenrolled adults who lacked a high school diploma or a GED certificate, another 9 percent were high school or college students, and 36 percent held an Associate's or Bachelor's degree. It was assumed that the distribution of part-time employed workers with a Level 1 or 2 prose proficiency score in each educational attainment category in Massachusetts was identical to that of their U.S. counterparts.

Estimates based on these assumptions are displayed in Table 2.16. A total of just under 280,000 Massachusetts part-time workers were estimated to have Level 1 or 2 prose proficiencies. Excluding all primary and high school dropouts from this total yields an estimate of 185,000 part-time workers with at least a high school diploma who have limited prose proficiencies. Another 45,000 members of this group were high school or college students and 14,000 were elderly workers (65+) who would not likely have a high demand for ABE classes based on past enrollments in JTPA or state-funded adult ABE programs in our state. Excluding these latter two groups yields an estimate of 126,000 part-time workers with a Level 1 or Level 2 prose proficiency. This last group are non-students, under age 65, who have graduated from high school or obtained a GED certificate. Boosting the literacy and numeracy proficiencies of this latter group would likely enhance their wage prospects, their promotion opportunities, and their ability to secure full-time jobs with higher pay and improved employee benefits.

The Literacy Proficiencies of the Unemployed

The National Adult Literacy Survey also collected data on the literacy proficiencies of the nation's unemployed adult population; i.e., those who were not work-

41 See Sum, *Literacy in the Labor Force.*

42 These estimates represent average monthly numbers of Massachusetts workers who were at work and employed for less than 35 hours per week during calendar years 1998 and 1999.

TABLE 2.17

Percent of Unemployed Workers with Level 1 or Level 2 Prose Proficiencies by Educational Attainment, U.S., 1992

Educational Attainment	Level 1	Level 2	Level 1 or 2
0-8 years	70.9	23.8	94.7
9-12 years, no diploma	31.9	40.7	72.6
HS diploma or GED, no college	19.2	44.9	64.1
1-3 years college, no degree	8.4	30.4	38.8
Associate's degree	4.3	14.8	19.1
Bachelor's or higher degree	4.4	9.6	14.0
Total	23.8	35.4	59.2

Source: 1992 National Adult Literacy Survey, tabulations by Educational Testing Service for Center for Labor Market Studies, Northeastern University.

TABLE 2.18

Estimated Number of Unemployed Workers in Massachusetts with Prose Proficiencies in Levels 1 or 2 by Educational Attainment, 1998-99

Educational Attainment	Number (in 1000s)
0-8 years	4.1
9-12 years, no diploma	17.7
High school diploma or GED, no college	22.9
1-3 years college, no degree	7.0
Associate's degree	1.2
Bachelor's or higher degree	2.9
Total	55.8
Less all persons lacking a diploma	18.8
Subtotal 1	37.0
Less all 16-24 year old students	4.6
Subtotal 2	32.4
Less elderly persons (65+) with at least a HS diploma	.8
Subtotal 3	31.6

Source: Monthly CPS surveys, 1998 and 1999 tabulations by Center for Labor Market Studies, Northeastern University.

ing at the time of the survey, but reported to the interviewer that they were "unemployed," "laid off," or "looking for work" in the week prior to the survey.[43] The prose and quantitative proficiencies of the unemployed were considerably weaker than those of the full-time employed.[44] Nearly 6 of 10 unemployed workers in the U.S. during 1992 had a Level 1 or Level 2 prose proficiency. The share of the nation's unemployed with very limited to modest prose proficiencies ranged from a high of 95 percent for those with only a primary school education to 64 percent for those with a regular high school diploma or GED to a low of 14 percent for those holding a bachelor's or more advanced degree (Table 2.17).

Due to substantial reductions in the state's aggregate rate of unemployment since 1993, there were only 109,000 unemployed workers during an average month in Massachusetts in calendar years 1998 and 1999. Unemployment rates ranged widely across educational subgroups, varying from a low of 1.8 percent for bachelor degree holders to a high of 9.2 percent for those with some high school, but no diploma or GED. Nearly 28 percent of the state's unemployed in 1998-1999 did not possess a high school diploma or GED while only 18 to 19 percent held a bachelor's degree.[45] To estimate the prose proficiencies of the state's unemployed, it was assumed that the distribution of the resident unemployed by proficiency level within each educational subgroup would be identical to that for the entire U.S. Our estimates of the number of the unemployed with very limited to modest prose proficiencies are presented in Table 2.18.

The average monthly number of unemployed state residents with only limited to modest prose proficiencies in 1998 and 1999 was estimated to be just under 56,000 (Table 2.18). Excluding all persons lacking a high school diploma and those 16-24 year olds enrolled in high school or college reduces this total to slightly over 32,000. Finally, excluding the small number of unemployed elderly workers who had completed 12 or more years of schooling reduces this total to slightly under 32,000. During any year, however, there is constant entry into and exit out of the ranks of the unemployed. On average, the total number of different individuals with a spell of unemployment will equal 2.5 times the average monthly number of unemployed. This would imply an annual flow of 80,000 unemployed workers with limited prose proficiencies.

The Literacy Deficits of Resident Adults Not Active in the Labor Force

There is one remaining group whose literacy and numeracy proficiencies need to be assessed. This last group consists of those adults who are not active participants in the labor force. The size of this group in Massachusetts is quite large, representing nearly one-third of the entire working-age population in the late 1990s. On average, during 1998 and 1999, there were 1.473 million working-age residents who were neither employed nor actively looking for work. This group included 670,000 persons 65 and older who were retired and expressed little interest in paid employ-

43 Given the nature of the NALS background questionnaire, we cannot identify the specific nature of the jobseeking activities of these "unemployed" or their availability for work during the reference week. As a consequence, the NALS unemployment definition is broader than that used in conducting the monthly CPS household survey.

44 See Sum, *Literacy in the Labor Force*, "Table 1-6," p. 34.

45 This group includes a number of high school students, but a substantial majority of them were out-of-school adults.

TABLE 2.19

Percent of Working Age Persons Not Active in the Civilian Labor Force with Level 1 or Level 2 Prose Proficiencies, U.S., 1992

Educational Attainment	Level 1	Level 2	Level 1 or 2
0-8 years	77.1	19.1	96.2
9-12 years, no diploma	41.6	36.6	78.2
HS diploma or GED, no college	21.0	39.2	60.2
1-3 years college, no degree	15.1	27.8	42.9
Associate's degree	7.6	27.9	35.5
Bachelor's or higher degree	7.4	16.5	23.9
Total	34.4	30.4	64.8

Source: 1992 National Adult Literacy Survey, tabulations by Educational Testing Service for Center for Labor Market Studies, Northeastern University.

ment as well as 180,000 high school and college students, most of whom will be entering the labor force of the state (and elsewhere in the nation) over the next few years. This group also includes some 70,000 to 80,000 individuals who have expressed an interest in paid employment, but whose personal job barriers are not known.[46]

A very high fraction of the adults not active in the nation's civilian labor force had quite limited prose proficiencies. Nearly two-thirds of these non-participants had a prose proficiency in Level 1 or 2 (Table 2.19). As was true for each of our earlier labor force subgroups, the proportion of non-participants with Level 1 or 2 prose test scores varied inversely with their educational attainment. Among people who never completed primary or middle school, 96 percent could only achieve a Level 1 or 2 proficiency versus 78 percent of high school dropouts, 60 percent of high school graduates, and 24 percent of bachelor degree recipients. A high fraction of these adults not active in the labor force were 65 or older and many had limited formal schooling; however, even among those under 65 years of age, the average scores of those adults not active in the labor force were considerably below those of full-time workers.

To estimate the number and percent of Massachusetts adults not active in the labor force who had Level 1 or 2 prose proficiencies, we first assigned each of these adults into one of six educational attainment categories. As noted above, nearly 30 percent of these non-participants did not possess either a high school diploma or GED, and only 20 percent held either a bachelor's or associate's degree. We then made the assumption that the prose test score distribution of the above Massachusetts adults in each educational attainment category was identical to that of their U.S. counterparts. The estimated numbers of working-age adults not active in the civilian labor force with Level 1 or Level 2 literacy proficiencies during 1998-99 are presented in Table 2.20.

The total number of such individuals is quite substantial. Nearly 854,000 adults who were neither working nor actively looking for work were identified as possessing limited to modest prose proficiencies. A relatively high fraction of this group (42 percent) did not possess either a high school diploma or a GED certificate. Excluding this subgroup from the total yields a revised subtotal of 490,600. Excluding all 16-24 year old high school and college students with limited literacy proficiencies from the total yields a new count (Subtotal 2) of 404,600. Finally, we exclude all elderly non-participants with at least a high school diploma from the total. The elderly also constitute a very high fraction of the pool of adults with limited literacy proficiencies. Their exclusion yields the final pool of inactive, non-elderly, non-student adults with limited literacy proficiencies of just under 178,000. A certain fraction of this last group might be enticed to join the labor force if wages and working conditions were sufficiently attractive. Adult literacy programs could play an important role in boosting their literacy skills and employability, thereby facilitating their entry into the labor force.

The Distribution of the Working-Age Population by Labor Force Status and Literacy Proficiency

The above estimates of the literacy proficiencies of the state's working-age resident population by labor force subgroup can be combined to provide a portrait of the literacy skills of the entire working-age population. We have generated estimates for the following three key groups of adults:

- Those with only a Level 1 proficiency. This group has very limited to no (English-language) literacy skills[47]
- Those with only a Level 2 proficiency. This group has limited to modest proficiencies
- Those with either a Level 1 or Level 2 proficiency.

The total number of adults with a Level 1 proficiency was 720,000. A majority of this group, however, was not active in the labor force. Still, 318,000 adults in the state's resident labor force in 1998 and 1999 had very deficient literacy skills. This group

46 As noted earlier, the monthly CPS household survey does collect information on the current job desires of individuals not actively looking for work, but it does not obtain any information on the specific nature of the jobs that they desire or the barriers that they may face in securing employment. Nationally, this "labor force reserve" includes many young adults under the age of 30, but relatively few elderly individuals (65 and older). The overall national size of this labor force reserve is quite large. During 1999, on an average month, there were nearly 4.6 million persons in the nation's labor force reserve. See U.S. Bureau of Labor Statistics, *Employment and Earnings*, January 2000, p. 210.

47 The NALS literacy assessment was based in English since it is a test of English literacy, document, and numeracy proficiencies. The background questionnaire, however, contained an English and Spanish version.

TABLE 2.20

Estimated Number of Working-Age Persons Not Active in the Civilian Labor Force with Level 1 or Level 2 Prose Proficiencies, by Educational Attainment, Massachusetts, 1998-1999

Educational Attainment	Number (in 1000s)
0-8 years	157.7
9-12 years, no diploma or GED	204.3
High school diploma or GED, no college	322.5
1-3 years college, no degree	88.1
Associate's degree	23.6
Bachelor's or higher degree	57.4
Total	853.6
Less all persons lacking a diploma	362.0
Subtotal 1	490.6
Less all 16-24 year old students	86.0
Subtotal 2	404.6
Less all elderly (65+) with at least a HS diploma	227.0
Subtotal 3	177.6

TABLE 2.21

Estimated Number of Adults (16+) in the Civilian Noninstitutional Population of Massachusetts with a Level 1 or Level 2 Prose Proficiency by Labor Force Status, 1998-99 (Monthly Averages, Numbers in 1000s)

Labor Force Status	Level 1	Level 2	Level 1 or 2
Employed Full-Time	213.5	463.2	676.7
Employed Part-Time	84.1	195.1	279.2
Unemployed	20.5	35.3	55.8
Out of the Labor Force	401.4	452.2	853.6
Total	719.5	1145.8	1865.3
Excluding those not active in the labor force	318.1	693.6	1011.7

Note: Numbers include persons from all educational backgrounds including primary and high school dropouts and from all age groups including the elderly (65+).

accounted for about 10 percent of the state's civilian labor force over this two-year time period.[48] The estimated number of working-age adults with a Level 2 proficiency was 1.146 million (Table 2.21). Excluding those adults not active in the labor force yields a revised count of 694,000 or 21 percent of the state's resident civilian labor force. The combined number of working-age adults with a Level 1 or Level 2 proficiency was 1.865 million, of whom 854,000 were not active in the labor force. The estimated number of civilian labor force participants with a Level 1 or Level 2 proficiency is just under 1,012,000, representing nearly 31 percent of the members of the state's resident civilian labor force in 1998-99. At the time of the 1992 National Adult Literacy Survey, 39 percent of the members of the nation's civilian labor force were found to possess only a Level 1 or Level 2 prose proficiency.[49] The stronger performance of Massachusetts workers on this literacy proficiency measure is due to the higher share of state workers with a bachelor's or more advanced academic degree.[50]

The above estimates of the number of adult residents with limited to only modest proficiencies need to be adjusted to exclude particular groups to avoid duplication in the count of state residents with a potential need for ABE and ESOL services and to prevent overestimates of the number of persons who would likely express an interest in receiving such services. In Table 2.22, we start with the complete count of residents 16 and older who had a Level 1 or Level 2 proficiency and then exclude the following three groups:

- Those out-of-school adults lacking a regular high school diploma or GED certificate
- 16-24 year old high school and college students
- Elderly residents (65 and older) who completed at least 12 years of school.

The total universe of working-age adults with an estimated Level 1 or Level 2 prose proficiency was 1.865 million. After excluding each of the above three groups, the count is reduced to 845,000. Some members of the above three excluded groups will, however, be a key target group for ABE, workplace literacy, and ESOL instruction. The estimated pool of non-elderly, non-student residents of Massachusetts with high school diplomas who have limited literacy proficiencies is quite substantial at 845,000.

The Universe of Need for ABE, Workplace Literacy, and ESOL Instruction

Developing estimates of a "universe of need" for ABE and ESOL instruction is a rather complex and somewhat subjective undertaking since it requires agreement on what criteria to use to define "need" and what criteria to employ in deciding whether to include or exclude certain subgroups from the universe of need. Our universe of need estimates include members of each of the following three groups, but exclude all 16-

48 The annual average size of the state's civilian labor force over this two-year period was 3.276 million, with little net growth taking place during 1999. See U.S. Bureau of Labor Statistics, *State and Regional Unemployment: 1999 Annual Averages*, February 2000.

49 See Sum, *Literacy in the Labor Force*, "Table 1-5," p. 32.

50 The methodology used to estimate the prose and quantitative proficiencies of the working-age population by labor force subgroup assumed that the distribution of state workers by prose proficiency level was identical to that for the U.S. within each educational attainment subgroup.

TABLE 2.22

Estimates of the Number of Massachusetts Working Age Residents with Level 1 or Level 2 Prose Proficiencies by Labor Force Subgroup, Selected Educational Group, and Selected Age Group, 1998-99 (Numbers in 1000s)

Educational/Demographic Group	Full-Time Employed	Part-Time Employed	Unemployed	Out of Labor Force	Total
All Educational Groups	676.7	279.2	55.8	853.6	1865.3
(a) Excluding those lacking a HS diploma or GED	528.7	185.5	37.0	490.6	1241.8
(b) Excluding 16-24 year old students	518.0	140.3	32.4	404.6	1095.3
(c) Excluding persons (65+) with at least a HS diploma	509.0	126.3	31.6	177.6	844.5

24 year old high school and college students and persons 65 and older. We include:

- Immigrants who have limited English speaking skills
- Those persons lacking a high school diploma or a GED (excluding immigrants with limited English speaking skills)
- Persons 16–64 with at least a high school diploma who have Level 1 or 2 proficiencies

The exclusion of students is justified on the grounds that the state's high schools and colleges should bear the responsibility for addressing the literacy and numeracy deficits of these students, including preparing existing high school students to pass the MCAS exam in order to graduate from high school. Excluding the elderly (65 and older) from the totals appears to be justified on the basis of their past limited participation in ABE and ESOL programs funded by the Massachusetts Department of Education and in employment-oriented, education and job training programs funded under the Job Training Partnership Act (JTPA). During the past year, only 6 percent of the participants in state-funded ABE programs were 60 or older, only 2 percent of the participants in JTPA Title II A programs for the adult economically disad-

TABLE 2.23

Estimated Universe of Need[1] for Adult Education, 1998-99

Group in Need	Number
Language Challenge	
Immigrants with limited English-speaking skills	195,000
Education Credential Challenge	
Adults lacking a high school diploma or GED	280,000
New Literacy Challenge	
Full-time employed[2] with a Level 1 or 2 proficiency	509,000
Part-time employed[2] with a Level 1 or 2 proficiency	126,000
Unemployed[2] with Level 1 or 2 proficiency	32,000
Out of labor force[2][3] with a Level 1 or 2 proficiency	178,000
Subtotal	1,320,000
Excluding people out of the labor force	178,000
Total	1,142,000

Note: (1) Counts exclude 16-24 year old students in high school and college and all persons 65 and older.
(2) Counts exclude persons lacking a high school diploma or a GED certificate.
(3) We acknowledge that many of the people in this group will never enter the workforce because of disabilities or other barriers, but a portion of them would work if their skills were better and other barriers to employment such as childcare or transportation could be addressed.

vantaged were 65 and older, and less than 1 percent of the enrollees in JTPA Title III programs for dislocated workers were 65 and older.[51] A separate set of estimates of the literacy and educational deficits of 16-24 year old students and elderly residents of the state is available in Appendix B.

The estimated overall universe of need for adult education programs in Massachusetts in 1998 and 1999 is 1.142 million. This total consists of 195,000 immigrants who had limited English-speaking skills, 280,000 non-elderly adults who lacked a high school diploma or a GED, and 667,000 labor force participants who held a high school diploma but had a Level 1 or Level 2 proficiency (Table 2.23).[52]

To place the size of the universe of need in perspective, it is 45 times greater than the total number of adults participating in Department of Education funded adult basic education and ESOL programs during the past calendar year, and it is 571 times larger than the number of residents receiving basic academic skills training from the state's JTPA network during program year 1998.[53]

The estimated overall universe of need for adult education programs in Massachusetts in 1998 and 1999 is 1.142 million.

Clearly, the potential universe of need for ABE and ESOL services overwhelms the current capabilities of the Massachusetts Department of Education and the workforce development network to deliver such services to residents. A substantially larger and more efficient ABE, workplace literacy, and ESOL system will be needed to strengthen the labor force attachment and employability of working-age residents, provide state employers with a more qualified and productive work force, boost the future real wages and earnings of state residents, and reduce the heightened degree of earnings and income inequality that prevailed within our state in the 1990s.

Concluding Thoughts

As this chapter has demonstrated, estimating the size of the population that lacks basic skills needed for successful participation in economic, political, and civic life today is a rather complex undertaking. We focused on working-age, non-elderly (16-64) members of the Commonwealth. We also exclude all 16-24 year old high school and college students. We focused on three groups: immigrants who have limited English speaking skills; persons lacking a high school diploma or GED; and persons 16-64 with at least a high school diploma who have Level 1 or 2 proficiencies, as measured by the National Adult Literacy Survey. In the third group, we consider separately full-time employed people, part-time employed people, unemployed people, and people out of the labor force. At the end, we arrive at an unduplicated estimate of 1,142,00 people who lack the skills or education needed in today's economy. Clearly, the population in need far, far exceeds the capacity of the ABE system as well as the capacity of other programs that provide basic skills instruction. We suggest that a substantially larger, more fully integrated, and more efficient adult education system will be needed to address this need, which will in turn strengthen the labor force attachment and employability of working-age residents, provide state employers with a more qualified and productive work force, boost the future real wages and earnings of state residents, and reduce the heightened degree of earnings and income inequality that prevailed in our state in the 1990s.

51 The JTPA estimates are based upon the SPIR public use data files provided to the Center for Labor Market Studies by the U.S. Department of Labor's Employment and Training Administration. Estimates are based upon five quarters of termination data.

52 The immigrant estimate is based upon findings from the 1990 Census. Given the high growth in the immigrant population since then, the number of immigrants in need of ABE and ESOL instruction is likely greater today.

53 During Fiscal Year 1999, only 23,381 adults were enrolled in DOE-funded ABE and ESOL programs throughout the state, and less than 2,000 youth or adults received basic skills training from the JTPA network during Program Year 1998.

CHAPTER 3 THE DEMAND FOR ADULT BASIC EDUCATION

IN THIS CHAPTER, we look at the students who take adult basic education classes. Using 1999 data, we consider the background characteristics of the participants and discover a diverse population. We then examine the demand for ABE classes—the waiting lists. Few programs promote their classes through outreach, but the demand for services is still much greater than the seats that are available, even though the state has increased funding and the capacity of the system. The waiting-list problem, however, is not the same for all programs around the state. It is most acute in urban areas, and the greatest demand is for ESOL classes.

The Role of Adult Basic Education

It is tempting to think about adult basic education in the way we think about the K-12 system. Such a comparison is faulty, though. In the K-12 system, educators determine a curriculum they expect students to follow. This system works for several specific reasons: Teachers have students for an extended period of time. Students pursue their education full-time. And students are required to attend classes.

None of these conditions hold true for adult students. Adult students enter the system voluntarily, have a wide range of abilities, and spend a much shorter amount of time in class. Consider that the average K-12 student spends about 900 hours per year in class, while the average adult student spends about 100 hours. In addition to their time in the classroom, adults also have work and family responsibilities, which typically limit their participation. Furthermore, the experience of learning for the typical adult student is likely to be quite different from that of the average student in the K-12 system. This is especially true for native-born students who often come to basic literacy and GED programs after years of struggling in school and who may retain bad associations with the classroom. These adults are the people for whom the K-12 system did not work. The schools failed to educate them, and they failed to learn.

Yet for a variety of reasons, these adults have chosen to try to learn again. Most ABE students enter programs after a specific event in their lives leads them to positive actions. A well-paid worker who loses her job cannot find a new job at the same pay without improving her basic skills; a parent may decide he needs more education when his first child begins school; a school dropout may have always wanted to study for the GED. Different motivations lead to different goals for adult students. A student's goal may be to improve basic skills, learn English, or get a GED. The goal might also be to get a better job, to help a child in school, to enter college, or simply to improve his life. The adult basic education system offers students an opportunity to learn, but a student's own motivation is truly the key to success.

Students Served by Adult Basic Education

"I am very glad that I just got into school again because there are many things that I need to learn. So when my children are in school I will be able to show, teach, and help them with their work from school... I am so grateful for this program that I am in, and for many other programs similar to this one. They give people, like me, a second chance to start and actually finish school... I want to give it all that I got."

—Zillah Feliciano, student at Read/Write/Now, Springfield, Mass.

"Once I could not read. I thank God for making me able to continue in school. When I was in Jamaica I never go to school. When I do go to school, I have a hard time to learn. The kids I went to school with all pass. I was the only one who stay back in school. I was so ashamed when everyone graduate. I feel so dumb. When I finish school I still could not read."

—Milton Forbes, student at Read/Write/Now, Springfield, Mass

Since 1994, the Commonwealth has substantially increased the funding for adult basic education. The state now spends about $30 million annually to educate adults through the Department of Education's ABE system, and state money accounts for three-quarters of the adult basic education budget. With these increases in funding, more and more students have been served

by the adult basic education system. In 1994, 14,557 students attended classes and by 1999, that number had increased to 23,381. While this is still only a small fraction of the adults who would benefit from ABE classes, it is still an impressive increase.

What can we say about the students who are served by the system? Table 3.1 describes the characteristics of students who most recently took ABE classes.[1] Ideally, we would like to be able to look at the students served over a period of time so that we could see if there have been changes in what the student population looks like over the past five or ten years. Unfortunately, our ability to do this is limited by the data available. Massachusetts has invested a lot of money and time into developing an improved data collection system, but these improvements are recent. Since 1997, new systems have been in place, and the data have become more reliable. Because of errors of double-counting, comparisons with older data would not be particularly useful, and here, we will limit our comparisons to the last three years.

A student's own motivation is truly the key to success.

Most students in the adult basic education system are women. In 1999, 61 percent were women, and this percentage has remained the same for the last three years. The percentage of women is fairly even across racial and ethnic groups with one exception. Among Asian students, there is a higher percentage of women students than for other racial and ethnic groups. In fact, 71 percent of the Asian students are women.

Not surprisingly, whites are the largest racial or ethnic group in the system, accounting for 37 percent of the students. Hispanics are the next-largest at 32 percent, while 18 percent of the students are African-American, 13 percent are Asian, and less than one percent are Native American or Alaskan Native. The racial and ethnic mix of students has remained relatively stable over the last three years, with fluctuations of only one or two percentage points.

The majority of the students in the system (69 percent) grew up speaking a language other than English, but English is still the single most common first language, and Spanish is a close second with about one-quarter of the students citing Spanish as their native language. Portuguese is the third-most-common native language, and Haitian Creole the fourth-most-common. Still, the number of students whose native language is either Portuguese or Haitian Creole is significantly fewer than those whose native language is either English or Spanish. Other native languages include Chinese dialects, French, Russian, and Vietnamese (Table 3.2).

TABLE 3.1

Student Characteristics, Fiscal Year 1999

Student Characteristic	Number	Percentage
GENDER		
Female	14,152	60.5%
Male	9,229	39.5%
Total	23,381	100%
RACE AND ETHNICITY		
American Indian/ Alaskan Native	92	<1%
Asian	2,969	12.7%
Black	4,219	18.0%
Hispanic	7,476	32.0%
White	8,625	36.9%
Total	23,381	100%
AGE		
16-18	454	2.0%
19-24	4,251	18.2%
25-44	12,947	55.4%
45-59	4,391	18.8%
Over 60	1,338	5.7%
Total	23,381	100%
LOCATION		
Rural	860	3.7%
Urban Areas w/ High Rates of Unemployment	9,739	41.7%
ECONOMIC STATUS*		
Employed	11,772	50.3%
Unemployed	5,523	23.6%
Unemployed, not looking for a job	6,146	26.3%
On Public Assistance	3,578	15.3%

* Numbers do not total 100 percent because categories are not mutually exclusive.

More than half of the students (55 percent) are between the ages of 25 and 44. Two percent are between 16 and 18 years old. Eighteen percent are between the ages of 19 and 24, 19 percent are between the ages

1 These numbers come from the Mass. DOE's federal statistical reports. They only include participants who received at least twelve hours of instruction or who achieved their goal in fewer than twelve hours. About eight percent of ABE students and four percent of ESOL students attend class for more than one hour but fewer than twelve hours. These numbers also do not include all of the students enrolled in workplace education or family literacy programs.

of 45 and 59, and 6 percent are over 60 years old. Again, these percentages have remained stable over the last three years, with some fluctuations by one or two percentage points but without a clear pattern of change.

One-fifth of the ABE students did not attend school in the United States. Among those who did attend school in this country, 45 percent dropped out before the ninth grade. Forty-six percent dropped out during high school, and 9 percent completed high school. The vast majority of ESOL students (92 percent) attended school outside of the United States, and because of different educational requirements in different countries, we do not know how many completed secondary school. About one-third (36 percent) dropped out of school before ninth grade, and 46 percent attended school for nine to twelve years.[2]

The overwhelming majority of students who come to the ABE system are connected to the labor market. Half of the students are employed in the labor force, and approximately one quarter are unemployed and looking for work. The others are either homemakers, retired persons or individuals otherwise not looking for work. Only 15 percent receive any type of public assistance.

TABLE 3.2

Native Languages of Students, Fiscal Year 1999

Native Language	Number of Students
Arabic	282
Cambodian	318
Cape Verdean Creole	443
Chinese-Cantonese	735
Chinese-Mandarin	402
Chinese-Toisanese	42
English	8,239
French	722
Haitian Creole	1,497
Japanese	101
Korean	193
Portuguese	2,650
Russian	777
Spanish	7,456
Vietnamese	473
Other	1,870

Students come to classes from around the state. Table 3.3 shows the regional distribution of students who take ABE and ESOL classes (ABE in this context refers to basic literacy, pre-GED, and GED classes). Most students come from Greater Boston. The fewest students come from the central region, Worcester County. In the southeast and western parts of the state, approximately the same number of students are in ABE and ESOL classes. In Greater Boston and central Massachusetts, more students take ESOL than ABE classes. If we compare where the students live to where the programs are, we find the geographic distribution of the programs is roughly consistent. The department should continue to watch these numbers to make sure that location of programs and classes corresponds to where students live. Ideally, we would also want to compare the place with greatest need for classes to the locations of the programs across the state. At this time, though, we do not have that information.

TABLE 3.3

Regional Distribution of ABE & ESOL Students, Fiscal Year 1999

Region	ABE*	ESOL	Total
GREATER BOSTON			
Essex	1,206	1,688	2,894
Middlesex	1,327	3,650	4,977
Norfolk	592	630	1,222
Plymouth	422	138	560
Suffolk	2,525	3,643	6,168
Total	6,072	9,749	15,821
SOUTHEAST			
Barnstable	308	507	815
Bristol	1,036	853	1,889
Dukes	43	39	82
Nantucket	8	1	9
Total	1,395	1,400	2,795
CENTRAL			
Worcester	853	1,236	2,089
Total	853	1,236	2,089
WESTERN			
Berkshire	407	213	620
Franklin	229	116	345
Hampden	628	720	1,348
Hampshire	193	329	522
Total	1,457	1,378	2,835
STATE TOTAL	9,777	13,763	23,540

*ABE refers to basic literacy, pre-GED, and GED classes.

These figures paint a picture of a diverse student

2 The information in this paragraph is based on 1998 data.

population, and adult basic education programs must provide instruction to this wide range of adults. The students served are the adults who show up for instruction. We don't know much about those who never make it to the door but who would certainly benefit from instruction. Programs rarely do outreach to attract more students, because many are already operating at capacity. Most new students come through word-of-mouth in the community, promotion of services by past students, and referrals from social service agencies. Since many programs have long waiting lists, systematic recruitment could easily overwhelm existing capacity.

Demand for ABE: The Waiting Lists

Because of the lack of capacity, the adult basic education system does virtually no outreach to potential students. We really don't know how many people would like to take adult basic education classes nor do we know how many would come to the door if there were more active outreach. Examining the number of people who are on waiting lists is one way to assess the demand for ABE that is currently unmet by the system. It is hard to pinpoint the exact waiting-list number, since the numbers vary throughout the year. The number of people waiting has ranged from 8,000 to 16,000 during recent years. The greatest demand is for ESOL classes, and more than half of those who wait seek these classes. The wait is longest in urban areas. The average waiting period ranges from five months to enroll in basic literacy classes to up to a year for ESOL classes.[3] At the Boston Chinatown Neighborhood Center, almost twice as many people are on the waiting lists than are actually in classes.

The number of phone calls to the state's literacy hotline, which is run by the System for Adult Basic Education Support (SABES), is another way to assess the demand for ABE classes. With no specific budget for publicity or outreach, the hotline does limited outreach to potential students through libraries, welfare offices, Head Start centers, career centers, and other social service agencies. It also places a limited number of public service announcements on television and radio as well as advertising in newspapers. Nonetheless, in each of the first five months of 2000, the hotline received an average of 150 calls from people seeking instruction for themselves, family members, or friends. When SABES does a publicity push—which on a budget of less than $5,000 would hardly qualify as a "media blitz"—the number of calls increases. Similarly, the last time *The Boston Globe* ran a feature article on adult illiteracy and included the literacy hotline number, calls to the hotline more than doubled.

In an attempt to understand the need for adult basic education, an Adult Education Committee was convened in the early 1990s. Its final report, which has come to be known as the *Grossman Report,* laid out a plan to close the gap between demand for and supply of adult basic education instruction. It aimed to eliminate waiting lists and improve quality of instruction through increases of funding of $7 million per year. In response, the Legislature has significantly increased funding over the last five years. The increase in state support has enabled some areas to meet the demands for services, but in most regions in the Commonwealth, demand continues to far outweigh availability.[4] Waiting lists, however, have not disappeared. Edward Moscovitch explains this phenomenon in *Closing the Gap:* "Once the word got out that more positions were open, more new people applied for service than could be accommodated by the increased funding."[5] The active demand and the potential demand are not fixed numbers. Rather, waiting lists are "moving targets." As people learn about opportunities, they want a chance to improve their skills. They are not asking for a handout from the state; they are asking for a chance to learn so that they can participate fully in today's economy.

For adults who cannot speak English well or who lack basic literacy skills, the experience of being placed on a waiting list can be frustrating and confusing. The following profiles reflect two adults' experiences:

Manuel

Manuel signed up for English classes at an urban community center three years ago. Several of his friends had recommended the center and told him he would be able to study for his high school diploma there. A year and half later, he received a letter from the center, inviting him to come in for testing. Unfortunately, the testing results placed him at a level in which no class space was available, so he was put back on the waiting list. The center asked Manuel to let them know if his address or phone number changed. Manuel believes his English isn't good enough yet to begin studying for the GED, so he doesn't bother studying on his own. He would eventually like to study computers. He doesn't know what the classes will be like at the center since he's never been inside, but he thinks programs should be more accessible. He says with disappointment, "People

3 Massachusetts Coalition for Adult Education, Fact Sheet, no date provided.

4 Phone interview with Charlie Houghton, Massachusetts Coalition for Adult Education, March 25, 1999.

5 Edward Moscovitch, *Closing the Gap: Raising Skills to Raise Wages* (Boston: The Massachusetts Institute for a New Commonwealth, 1997), p. 43.

shouldn't have to wait for two or three years."

Teresa

Teresa was studying in an ESOL program at a local high school when a friend encouraged her to sign up at the adult education center, where the program was supposed to be much better. She was excited to find out that the adult education center offered computer-skills courses as well. The center also appealed to her because it was free and had a good reputation in the area. She signed up and waited a year before the center called to let her know she could start classes. Unfortunately, she couldn't accept the offer because the class schedule conflicted with her work hours, so she was put back on the waiting list. Teresa carries a copy of *Side by Side*, an ESOL textbook, and tries to study on her own. In her work as a hairdresser, she wants to be able to communicate better in English with customers. She admits that she doesn't know about other ESOL programs in the area.

These and other conversations with students indicate that many ABE students may not know about other programs, even those students who have been on a waiting list for several years. When asked if she considered other programs while on the waiting list, one ABE student responded, "I didn't even know where to begin looking, to be honest." Currently, many adults rely on informal advice from friends or family to find out about program options. In addition, some students prefer to be put on a waiting list rather than get referred to another program, because they want the specific program recommended by a friend or relative.

The waiting-list problem is not the same for all programs around the state. In many urban areas, the demand for services continues to outweigh supply. The high demand for ESOL classes reflects the increasing number of immigrants who live in urban areas. The following numbers, which come from interviews with program staff in late 1999 and early 2000, are a reminder that thousands of people who lack basic skills want the opportunity to improve themselves:

- About 1,000 people are waiting for one of 350 seats in the ESOL department at the Somerville Center for Adult Learning Experiences (SCALE). Students are told to expect to wait up to eighteen months before enrolling.

- The Cambridge Community Learning Center had about 225 students waiting to enroll in ESOL classes and 90 students waiting for ABE classes.

- The Brockton Adult Learning Center reports more than 1,200 students on the waiting list, with the wait lasting anywhere from a few months to two years.

- The Mass. Job Training Program, also in Brockton, reports 115 adults on its waiting list.

- Approximately 400 people are on the waiting list at Boston Chinatown Neighborhood Center (formerly the Quincy School Community Council), which currently accommodates only 225 students.

- More than 95 percent of the 250 to 300 people on the waiting list at Jackson Mann Community Center in Boston are waiting to enroll in ESOL classes, and the center is only able to serve about 220 students.

- Although it recently doubled its number of ESOL classes, East Boston Harborside Community Center still has 200 people on its waiting lists, with an average waiting period of six months.

- The Framingham Adult ESOL program reports 224 students waiting for classes.

- At the Worcester Adult Learning Center, 523 people are waiting to enroll in classes. Almost 90 percent are seeking ESOL classes, with the remaining 10 percent waiting for GED classes.

- The Center for New Americans, which serves the Amherst, Northampton, and Greenfield areas, reports 48 people waiting for classes.

- 55 people are waiting to enroll in classes at Read/Write/Now in Springfield.

- In Pittsfield, there had been 521 adults on the waiting list, and four out of five of them were eventually able to enroll in classes in 2000. The average waiting time is about one month for ESOL classes and six to ten weeks for ABE classes.

- 31 people are waiting to enroll at the Valley Opportunity Council in Chicopee. Most are seeking ESOL classes.

- At the Lowell Adult Education Center, 364 student

are waiting for classes. Of these, 234 are waiting for ESOL classes, with the remainder for ABE classes.

- More than 270 adults are waiting at the Immigrant Learning Center in Malden.

- Waltham Public Schools Power Program reported about 230 adults on its waiting list.

Several program directors interviewed for this report explained that despite increased funding they are still unable to meet the demand for ABE classes. Again, this is mostly without trying to attract students through outreach and recruitment in the communities. Many programs simply do not have the classroom space to provide enough classes. In addition, staff members worry that increasing the number of students may compromise program effectiveness. They prefer to keep classes small and increase the number of hours of instruction.

Maintaining waiting lists and responding to students who come through the door are both time-consuming tasks. Different programs have different strategies for managing the lists of prospective students. Ideally, program staff members should check in periodically with students on waiting lists to see if their scheduling preferences and contact information have changed. Staff members at the Somerville Center for Adult Learning Experiences (SCALE) often find that by the time they are able to offer a person entrance into a class, the potential student's address and telephone number are no longer current. In fact, SCALE often mails out eight to ten letters before reaching a student who can enroll in classes.

The Jackson Mann Community Center in Boston has found that spending time assessing a student's skills and learning needs when the student walks in the door helps to better manage the waiting list, because the staff is better prepared to place an adult in the appropriate class when a seat becomes available.[6] Staff members at the Charlestown Adult Learning Center prefer to offer referrals to other programs and counseling so that potential students do not languish on a waiting list and become discouraged about going to school.[7]

Lynn Weintraub, at the Jones Library program in Amherst, suggests that waiting-list management is different in volunteer tutoring programs. Tutoring programs seek to match up tutoring pairs, rather than filling a seat in a class. Thus, there is a more deliberate effort to accommodate the student's schedule so that the learner can meet a tutor at a convenient time and place. Finding good matches is not always possible, so there are always some people waiting for services. The library program, however, is able to serve students who are unable to participate in other programs, because of schedule conflicts, lack of transportation, lack of child care, or health reasons that prevent people from getting to a program site.[8]

East Boston Harborside Community Center used its funding increase to double the number of beginning ESOL classes, enabling about 200 people on the waiting list to start classes. In addition, the waiting period has been reduced from eighteen months to six months. There are still about 200 people on the waiting list, though. Students who are members of the community center are given access to the computer lab, even if they are not yet enrolled in an adult education class.[9]

The Boston Chinatown Neighborhood Center (BCNC) reduced its waiting list by enrolling students in a peer tutoring program. (See page 52 for a profile of the Boston Chinatown Neighborhood Center.) Begun in 1991, this program matches students who have completed the highest level of ESOL with beginning students who are on the waiting list. The more experienced students help the new students improve their skills so they qualify for a more advanced ESOL class. As a result, many students can avoid waiting for a seat in entry-level classes where the waiting lists are typically quite large.[10]

In 1999, the Mass. Department of Education also started a program to use technology and distance learning to serve students who are not being served by traditional classes, either because there is no room for them or there are other barriers, such as distance or schedules. The Distance Learning Project is currently operating at four project sites: North Adams, Hyannis, Lawrence, and Springfield. The project uses telecommunications technology (computer and video) to create a "virtual classroom."[11] For instance, the North Adams program, which is run by the Massachusetts College of Liberal Arts, provides Internet access for students, and the students must use e-mail and the Internet to complete their homework assignments. According Terry Miller, the program's director, as a consequence of participating in these classes, a number of students decided to buy their own computers, while others opted to subscribe to WebTV—which at $200, is far more affordable than purchasing a computer. More-

6 Phone interview with Shelley Bourgeois, director, Jackson Mann Community Center, July 29, 1999.

7 Phone interview with Peggy O'Brien, director, Charlestown Adult Learning Center, July 29, 1999.

8 Phone interview with Lynn Weintraub, director, ESL Center, Jones Library, Amherst, April 16, 1999.

9 Phone interview with Paul Trunnel, director, East Boston Harborside Community Center, April 6, 1999.

10 Diane Paxton, "Field work: Exploring New Approaches in ESOL," *All Write News* 15(4), January 1999.

11 Phone interview with Roger Hooper, manager of adult basic education, Massachusetts Corporation for Education Telecommunications (MCET), May 2000.

over, some students are interested in pursuing their own Web consulting businesses. This project demonstrates the impact that technology could have on expanding services.

Under the SMARTT data system, we will eventually be able to better track waiting lists. Each ABE program is asked to report a monthly waiting-list count. These monthly counts are tallied to calculate a yearly estimate of the number of students on the waiting list in a given program. The program counts are then added to generate a statewide estimate. This final tally indicates how many students in a given year were on a waiting list throughout the entire state, but it does not tell us how many students actually moved off the waiting lists and were served.

Once adults who need basic skills training, English-language instruction, or a high school credential find out that there are effective and convenient services available, they will seek them in greater numbers.

Unwieldy waiting lists are not a problem in most rural programs, and the numbers cited earlier are smaller in less densely populated areas of the Commonwealth. Charlie Houghton, Director of the Massachusetts Coalition of Adult Education (MCAE), suggests that for rural areas, the critical problems include lack of transportation, inadequate outreach, and student anxiety about returning to school—not waiting lists.[12] According to program staff members, three-quarters of the 115 students enrolled in the Ware Literacy Project program walk four miles to get to the class, and this prevents many from attending regularly. In the summer, participation rates in rural areas drop because parents often do not have child care and need to stay home.[13] In these areas, if student-support services were provided, the demand for instruction would probably increase.

This discussion of capacity is a good place to end this chapter. If, as is hoped, the suggestions in this report lead to more effective programs, we would expect the number of students coming to the door for help to increase. Once adults who need basic skills training, English-language instruction, or a high school credential find out that there are effective and convenient services available, they will seek them in greater numbers.

Concluding Thoughts

A diverse group of students take adult basic education classes. The students served are the adults who show up at the door for services. We don't know much about those who never make it to the door but who would still benefit from instruction. Because of the lack of capacity, the adult basic education system does virtually no outreach to potential students. Even without outreach, students are showing up at the door for help, mostly through word-of-mouth. There is clearly an active demand for ABE instruction.

Examining the number of people who are on waiting lists is one way to assess the active demand that is currently unmet by the system. It is hard to pinpoint the exact number, since it varies throughout the year. The number of people waiting has ranged from 8,000 to 16,000 during recent years. ESOL classes are in greatest demand, and more than half of those who wait seek these classes. The wait is longest in urban areas. The average waiting period ranges from five months to enroll in basic literacy classes to up to a year for ESOL classes.

We really don't know how many people are coming to the door nor do we know how many would come to the door if the Department of Education launched an outreach program. The number of phone calls to the state's literacy hotline offers a way to assess the demand for ABE. With a very limited budget, the hotline does some outreach but certainly nothing that would qualify as a "media blitz." Nonetheless, in the first five months of 2000, the hotline received an average of 150 calls each month from people seeking instruction for themselves, family members, or friends.

With the increases in state funding, the adult basic education system has been able to serve more students. Nonetheless, there is a still an active demand that is not met by the ABE system. We can only guess what that demand would be if a serious outreach effort were launched. People want to improve their skills. They are not asking for a hand out from the state. They are merely asking for a chance to participate in the New Economy, and for an opportunity help themselves and have a chance to participate in the New Economy.

12 E-mail communication, July 9, 1999.

13 Phone interview with Sharon Feeney, coordinator, Ware Literacy Project, July 16, 1999.

CHAPTER 4 FUNDING FOR ABE

THE COMMONWEALTH HAS DEMONSTRATED a serious commitment to building an adult basic education system. For the last six years, it has substantially increased ABE funding. In Fiscal Year 2000, the total funding for ABE was $40.9 million, and the state government provided three-quarters of the money. Greater resources have enabled more students to receive instruction and have improved the quality of instruction. However, the funding of ABE is fundamentally different from all other types of education funding. ABE is funded by what could be called a "soft" funding approach that creates an environment of uncertainty and decreases incentives for programs to make long-term investments and engage in long-term planning. While the Department of Education has tried to offset this through five-year funding cycles, it is time to explore ways that adult basic education can become part of the state's permanent educational system.

Funding for ABE

The Mass. Department of Education administers the adult basic education program through its Adult and Community Learning Services (ACLS) unit. The ACLS has about 35 professional staff members and is directed by Robert Bickerton, who was previously an ABE teacher and program director. The ACLS oversees a process of planning with service providers and advocates in the field. It also manages the field's relationships with the administration and the Legislature. The main administrative functions of the ACLS are dispersing state and federal funds and collecting data about the system.[1]

Funding for adult basic education comes from federal, state, and other local and private institutions. State funding for ABE is recent. 1982 marked the authorization of Massachusetts's first state appropriation for adult education, in the amount of $600,000. Three years later, a push by advocates for increased funding was successful and the appropriation increased to $2 million. By 1987, resources doubled again to $4 million.

That amount of funding remained stable until the mid-1990s. In 1993, the state's landmark Education Reform Act (ERA), best known for setting new guidelines for the state's K-12 system, also had a strong impact on adult basic education. The legislation established the Adult Education Committee to look at important issues facing ABE, including its funding. The committee's final report has come to be known as the *Grossman Report* after the committee's chair, Jerome Grossman.[2] The *Grossman Report* put adult basic education on the radar screen of the State Legislature by persuasively documenting the huge need for adult basic education compared with the tiny fraction of students that were educated by the ABE system. It also brought attention to the thousands of adults who were waiting for classes—showing how the active demand for services was unmet by the system. The report recommended a five-year plan to close the gap between the demand for and supply of adult basic education and called for annual budget increases of $7 million to do this, while also improving the quality of ABE.

In 1996, shortly after the release of the report, the state doubled the annual ABE budget to $8 million, and for the first time, state funding for adult basic education surpassed federal funding. Each following year, the state increased the amount of money it has devoted to adult basic education. By 2000, state funding had reached $30.2 million, and the total public investment was $40.9 million—quite an increase from the $11.6 million just six years earlier. Table 4.1 shows the amount of funding compared to the number of students, the hours of instruction, the number of communities served, and the number of providers supported, and Figure 4.1 shows the funding sources.

The majority of state funding comes from the Mass. Department of Education, but other state agencies provide funding as well. These agencies include the Corporation for Business, Work, and Learning; the Department of Employment and Training; the Department of Corrections; the Department of Transitional Assistance; the Office for Immigrants and Refugees; the Board of Library Commissioners; and the Board of Higher Education. Some cities and towns also

1 See Appendix A for a description of the data-collecting system.

2 See Jerome Grossman, "Phase 1: Final Report & Recommendations," Adult Education Committee, September 1995.

TABLE 4.1

Overview of Funding Levels, Students and Communities Served, and Providers Supported

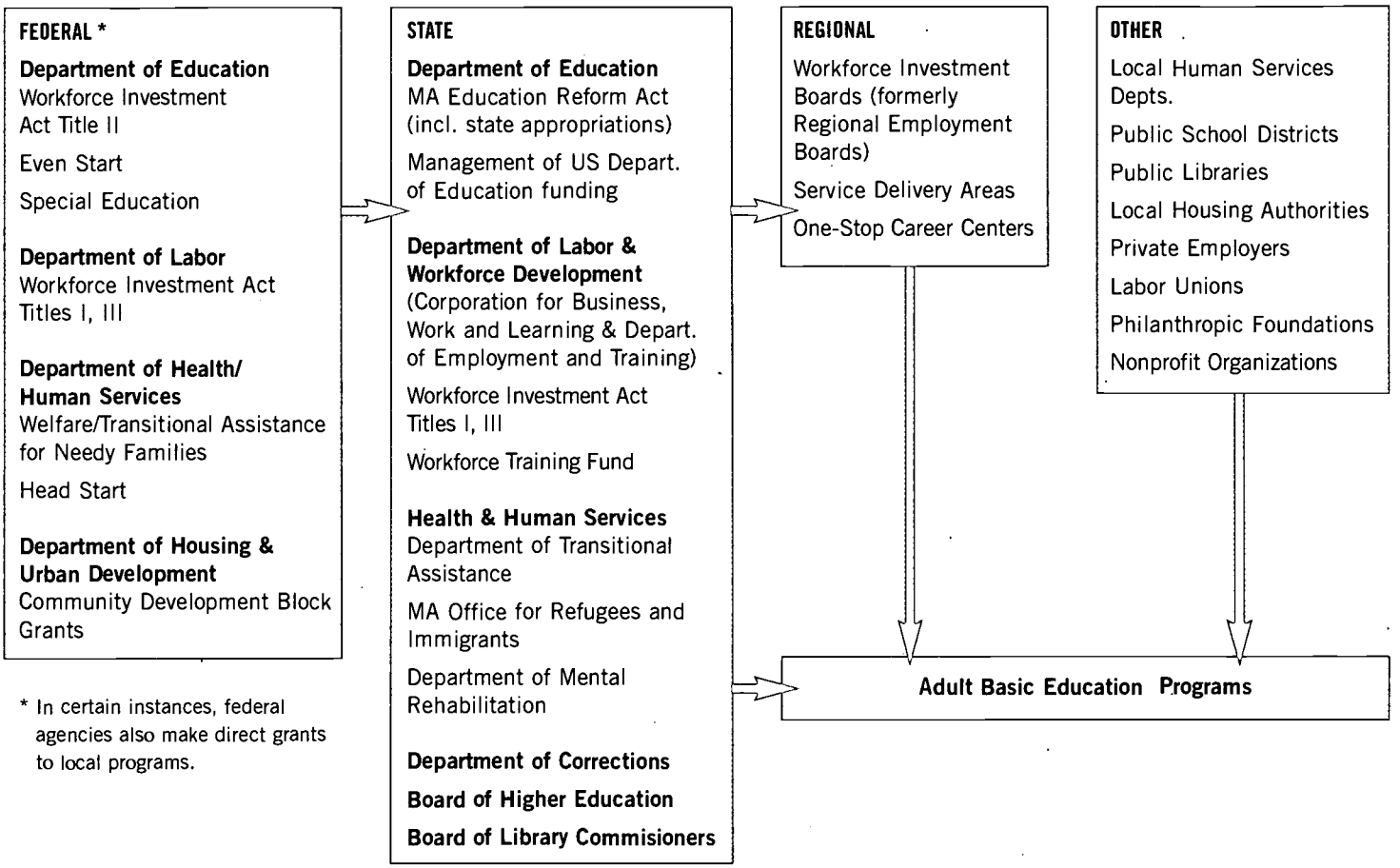
Fiscal Year	Funding Level	Funding Type	Students Served	Investment/ Student[2]	Student Hours Provided	Investment/ Student Hour[3]	Hours/ Student	Communities Served
1994	$4,933,272	Federal	14,557[4]	$799	1,405,802	$8.27	97	65
	$4,165,626	State						
	$2,528,560	Other						
	$11,627,458	Total						
1995	$4,933,272	Federal	14,602[5]	$827	1,406,955	$8.58	96	65
	$4,205,465	State						
	$2,936,515	Other						
	$12,075,252	Total						
1996	$4,933,272	Federal	16,213[6]	$999	1,314,911	$12.31	81	75
	$8,245,465	State						
	$3,012,511	Other						
	$16,191,248	Total						
1997	$4,828,379	Federal	17,565[7]	$1,049	1,500,746	$12.28	85	91
	$11,745,465	State						
	$1,848,450	Other						
	$18,422,294	Total						
1998	$6,660,104	Federal	21,244[8]	$1,376	2,027,877	$14.42	95	117
	$19,545,465	State						
	$3,031,817	Other						
	$29,237,386	Total						
1999	$6,758,226	Federal	23,381[9]	$1,574	2,505,478	$14.69	107	120
	$26,626,751	State						
	$3,418,087	Other						
	$36,803,064	Total						
2000	$7,078,120	Federal	24,581[10]	$1,668	/	/	/	120
	$30,201,751	State						
	$3,709,754	Other						
	$40,989,625	Total						

Source: Massachusetts Department of Education, 1999.

1 Funding levels reflect state, federal, and other resources available through the Massachusetts Department of Education. Unlike the Federal Statistical Reports for years prior to Fiscal Year 1999, these service levels here do not include services funded through matching resources. They do include all funds for grants to programs, professional development, technical assistance, and administration.
2 Based on resources for grants to programs, professional development, technical assistance, and administration.
3 Based on resources for grants to programs, professional development, technical assistance, and administration.
4 Includes workplace and family literacy services supported by discretionary or speciality project funds.
5 Includes workplace and family literacy services supported by discretionary or speciality project funds.
6 Does not include (all) workplace and family literacy participants supported by discretionary or speciality project funds. The estimated number of missing participants is 1,200.
7 Does not include (all) workplace and family literacy participants supported by discretionary or speciality project funds. The estimated number of missing participants is 1,200.
8 Includes all workplace and family literacy services supported by discretionary or speciality project funds.
9 Includes workplace and family literacy services supported by discretionary or speciality project funds.
10 Massachusets Department of Education estimate.

FIGURE 4.1

Primary Funding Sources and Coordinating Agencies for Adult Basic Education in Massachusetts



include adult education in their school or city budgets. In 1995, thirty-five school districts reported school committee expenditures for adult education, which provides a rough approximation of funding for ABE. The total expenditures for these districts were slightly over $2 million. Lowell reported the highest level of expenditure ($315,617), while Concord-Carlisle reported the lowest level of expenditure ($125).

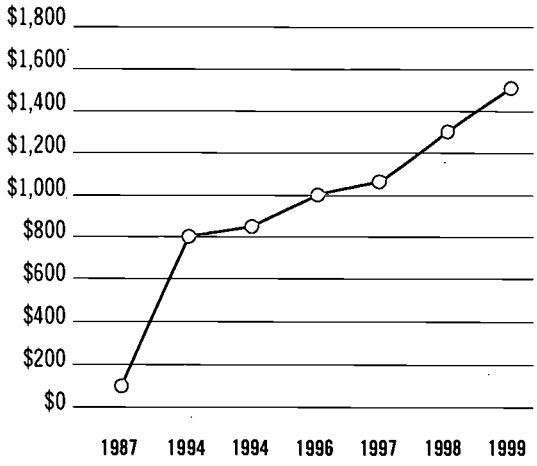
Little is known about other sources of funding. Very few data are available about fee-based services offered by private for-profit and not-for-profit corporations, and the amount of private-foundation funding invested in adult basic education in the Commonwealth has not been surveyed. Important sources of private funding include Literacy Volunteers of America and Laubach Literacy Action, both of which support volunteer tutoring of adults with private funds. Unfortunately, the extent of funding of literacy programs by private firms is not known, but this funding may be quite substantial.

Cost of Educating Students

As the funding has increased, so has the amount of money spent on each student (Figure 4.2). This reflects a conscious decision by the Department of Education to focus on the quality of service provided to each student. The system only serves a tiny fraction of the potential student population, and thousands of students wait to attend classes. The high demand puts pressure on the system to serve more students, possibly at the expense of improving the quality of instruction. There is a constant need to balance quality with quantity. As funding for ABE has increased, the Department has kept a careful eye on increasing quality. The Adult Education Committee had estimated the average cost to be roughly $2,500 per seat per year. While the actual cost per student has been increasing, it is still far less than the $2,500 figure. However, since more than one student often sits in "a seat" in a given year, the level of funding is closer to the committee's recommendation than the numbers suggest.

FIGURE 4.2

Cost per Student for Fiscal Years 1987 to 1999



A Fragile System Based on Soft Funding

Adult basic education stands alone among the state's other educational systems in the way it is funded. Rather than state funding going directly to long-standing institutions with largely permanent staffs and established physical infrastructures, funds are distributed largely to community-based private providers. These providers are responsible for hiring instructors on a class-by-class basis and for arranging the physical space where the class is held (renting community centers, securing donated office space, etc.)

The virtue of this system for ABE is that providers must competitively bid to secure state contracts and this creates both incentives to demonstrate program effectiveness and a diversity of providers. The growing disadvantage of this "soft funding" system is that it sacrifices stability and inhibits the establishment of a more permanent, institution-based way of delivering instruction. It also creates, at least, the perception of a fragile system characterized by an environment of uncertainty. Each year the way ABE services are delivered to a particular community changes, depending on the level of overall state funding, the conduct of the DOE-managed bid process, the financial health of various community based organizations, and a range of other variables. Programs do not have an incentive to make long-term investments in technology or infrastructure. A year-by-year approach does not lend itself well to strategic and long-term planning.

For instance, one of the most vexing problems facing providers is how to obtain permanent or long-term physical space. The state has been successful in the past in using its own quasi-public financing institutions, such as MassDevelopment or the Mass. Health and Educational Facilities Authority (HEFA), to provide capital for long-term leases or building purchases for Charter Schools. The same approach may make sense for local community-based ABE providers who need assistance in financing their own physical infrastructure.

Within a soft funding approach, the ACLS, which disperses state and federal funding, has tried to offset this instability by making multi-year grants to programs. ACLS makes five-year grants subject to a positive annual review of program performance. Five-year cycles help get programs out of the year-by-year mentality and allow for some planning based on a reasonable expectation of funding over a period of time. Though the efforts of the ACLS have led to a more stable system, the entire enterprise is still funded using a soft funding approach. Teachers and staff know that funding could end at any time, and as their agency comes up for renewal, that uncertainty increases. If jobs are available in the hard-money K-12 system or the private sector, teachers and staff members are likely to take them. This is a contributing factor to the high turnover among the teaching and administrative staff of ABE programs. The ability of programs to commit to space is also constrained. If a program needs to move to new space two years before its grant renewal, it can only commit to a two-year lease.

Programs that submit applications for grants compete within their geographic area. Funds available to regions are determined by an ACLS formula that takes into account need and demand for services using 1990 Census data. There are also some specific statewide set-asides that programs can apply for to target funds for special populations (e.g. corrections, workplace education) or to fund support services to help address impediments to learning, such as child care, transportation barriers, or learning disabilities.

The size of individual grants is determined using a series of formulas embedded in the Massachusetts ABE Rates System. This system applies student-hour rates to proposed services. These rates vary by type of service. The ABE Rates System represents ACLS's commitment to pay for the real costs of ABE services. The system links the Guidelines for Effective Adult Basic Education to dollars via service rates. Prior to implementation of this system, requirements were often unrealistic and unfunded mandates were common. For instance, grantees were expected not only to provide instruction, but

also counseling and follow-up of students after they left a program with an average per-student expenditure of $100 per year irrespective of the type, duration, or intensity of services. It also helps to apply a uniform set of criteria to the programs it funds.

The ABE system has shown that it can provide some services well. For example, most programs in the system do help beginning ESOL students acquire English-language skills and students whose reading skills are above the ninth-grade level to prepare for the GED tests. Some programs are helping learning-disabled students make slow but steady progress in improving their literacy skills. These programs should be moved to hard-money status so they can begin building permanent institutions that offer stability to their staff and students.

At the same time, soft funding should remain as a way to help new programs start. Soft-funding support should also be used to support research and demonstration projects aimed at developing better ways to address the needs of individuals who are not well served by the ABE system today. This includes young, male adults who are members of minority groups, adults who have passed the GED but do not have the basic skills needed to succeed in post-secondary education and training, or adults whose work and family responsibilities do not leave enough time to attend regular classes. If the programs are then successful and considered worthwhile, they could then begin to be funded by hard money. The move from a soft funding approach to a hard money system may take several years, and it is unclear what exact form it should take, but a gradual introduction of hard money is an extremely worthwhile goal for the Department of Education to pursue.

ABE Providers

The network of providers in the Commonwealth is diverse. This is partially the result of the federal Adult Education Act of 1966 that mandated direct and equitable access to funding for a variety of providers. Historically, the largest share of ACLS funding has been awarded to non-profit and community-based organizations. The next largest share goes to school districts. A smaller share goes to higher education and community colleges, and a small fraction goes to corrections. Figure 4.3 shows the distribution of funds by type of service-provider. The wide range of providers in Massachusetts is generally a strength of the ABE system. Across the state, there are exemplary programs in all provider groups, including community-based programs, programs at community colleges, and programs provided by school districts or libraries.

Adult Education Districts

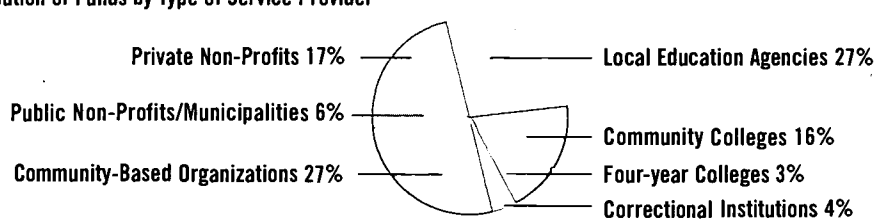
ABE programs are administered by a wide range of institutions. This wide range of providers is valuable because different types of services work well for different people. But there is also a liability to this wide range of providers. Many of the institutions are small and suffer from the administrative limits of their size. Because of this, we should start to rethink the administrative structure of ABE, and the concept of adult-education districts provides a good starting place.

As the ACLS asks programs to take on many new initiatives, such as community planning, data collection, testing for the accountability measures of the Workforce Investment Act, counseling of students, and integration of technology into administration and instruction, many programs report that they are stretched beyond their capacity. Small programs ask one staff member to divide his or her time among several initiatives, and in addition, that staff member might be teaching students.

These initiatives, which are important to improving services, could benefit from the economies of scale. Although one solution could be to have a system of fewer larger programs, such as community colleges, these programs do not fit all students' needs, because their environment may not be as inviting as a smaller neighborhood institution for some students. By switch-

FIGURE 4.3

Distribution of Funds by Type of Service Provider



ing to a system of only large providers, we would likely lose some students and discourage others from starting.

We need to find a way to maintain the diversity of providers that allow students the greatest amount of choice but, at the same time, gain benefits that come with larger scale wherever possible. One possible solution would be to create adult-education districts. The ACLS would seek a single agency to administer funds in a geographic area, a neighborhood, a town, or a county. In the same way that a school district manages K-12 services in a geographic area, the ACLS could rely on adult-education districts. In these districts, a group of implementing agencies would come together to share their resources and develop a coordinated plan to serve all adults in their geographic area. This approach would allow economies of scale and also allow institutions and people to do what they do best.

In each adult-education district, one person could work full-time to coordinate all of the services. That person and his or her staff would undertake the activities that benefit from the economies of scale. They could identify how many people need services and how they want those services delivered. The district leader could coordinate planning among provider organizations, manage technical assistance and training, provide benefits and even pay salaries, provide substitute teachers to step in when regular teachers are sick, and provide technology resources to programs and students. Local programs would then serve the people they were best able to serve. Accountability would be at the district level, rather than at the program level. This would help ensure that programs that accomodate the most difficult-to-serve students would not have the incentive to work only with the strongest students.

Concluding Thoughts

Since 1994, the amount of money allocated to adult basic education has increased; the number of students served has increased; the number of student-hours has increased; the number of communities served has increased; and the number of providers supported has increased. By repeatedly devoting more resources to adult basic education, the Commonwealth has clearly demonstrated its commitment to upgrading the skills of the people in the Commonwealth. Despite these efforts, the ABE system currently reaches less than six percent of the students who could benefit from basic literacy, GED, and ESOL classes. Thousands of students would like the chance to learn. Despite the state's commitment to ABE as demonstrated through increased funding, we simply do not have anywhere close to the capacity needed to train and educate the workers of Massachusetts for the New Economy.

CHAPTER 5 BUILDING BASIC SKILLS THROUGH ADULT EDUCATION

WE HAVE IDENTIFIED three distinct challenges in building people's basic skills: a Language Challenge, an Education Credential Challenge, and a New Literacy Challenge. In this chapter, we examine how well and in what ways the ABE system addresses each of these challenges. There are three types of ABE classes: English for Speakers of Other Languages (ESOL), basic literacy, and Adult Secondary Education (ASE), which prepares students to take the GED exam. These classes are best suited to address the Language and Education Credential Challenges but are more limited with respect to the New Literacy Challenge. The most advanced ABE class prepares students to earn a high school credential, but there are hundreds of thousands of workers who have a high school credential and who still do not have the skills needed in today's economy. There are currently limited options within the ABE system for these workers. The New Literacy Challenge is sometimes addressed through workplace education programs, but this gap in policy must be more systematically addressed. Currently, community colleges come the closest to addressing this challenge through their "developmental education" programs, and we believe these programs should be expanded. In the second part of the chapter, we offer a brief overview of the teachers who teach adult basic education. Research suggests a stable workforce of teachers is critical to ensuring high-quality programs. Yet we find a workforce marked by a high rate of turnover and a large proportion of part-time teachers.

Adult Basic Education Programs

"Massachusetts shall provide each and every adult with opportunities to develop literacy skills needed to qualify for further education, job training and better employment and to reach his or her full potential as family member, productive worker and citizen in our diverse and changing democratic society."

—*ABE Mission Statement, November, 1993*

Adult basic education programs offer a continuous sequence of classes that enable students to progress from the most basic level of proficiency to a high school credential.[1] There are three main types of classes: 1) For immigrants, there are three levels of English language instruction; 2) For native speakers of English and immigrants who have fluency in English, there are two levels of basic skills instruction; and 3) For the most advanced students, there are classes offering preparation for the GED exam. Table 5.1 shows the number of students in each of the three main programs during the Fiscal Year 1999 (July 1, 1998-June 30, 1999).

A brief note on terminology is necessary here to avoid confusion. The term "adult basic education" is used in two different ways. While it sometimes refers to all three types of classes (ESOL, literacy, GED), it is also used to refer only to literacy classes. Its meaning depends on the context. In addition, GED classes are sometimes referred to as ASE (Adult Secondary Education) classes, because, in addition to the GED, there are other ways to get a high school credential, although the GED is the most common way.

According to the Massachusetts Department of Education, those who are eligible to participate in programs are people:

- Not enrolled in secondary school
- Sixteen years of age or older
- Who have the capacity to begin the acquisition of reading, writing, and/or computation
- Who lack the educational foundation expected of a high school graduate

1 Funding for the programs is awarded based on a regional competition that incorporates state and federal mandates, regulations, and guidelines. The size of grant awards is determined using a budget process that applies different rates for different services.

TABLE 5.1

Number of Adult Basic Education Students by Program Type, Fiscal Year 1999

Program Type	Number of Students	Percent of ABE
1. ESOL Classes		
A. Beginning ESOL	7,405	31.7
B. Intermediate ESOL	3,260	13.9
C. Advanced ESOL	2,509	10.7
Total ESOL	**13,174**	**56.3**
2. Basic Literacy Classes		
A. Beginning Literacy	3,167	13.5
B. Pre-ASE	3,262	14.0
Total ABE	**6,429**	**27.5**
3. Adult Secondary Education/GED	3,778	16.2
Total GED	**3,778**	**16.2**
Total Adult Basic Education	**23,381**	**100.0**

Source: Mass. Department of Education
Note: A student is an adult who receives at least twelve hours of instruction or achieves his or her goal in fewer than twelve hours.

There is wide variation in instructional format among the programs. Some programs follow a classroom format, some use one-on-one tutoring, and some combine the two approaches. Large programs often offer classes at different skill levels, while smaller programs often teach to a classroom of students who are at different levels. Programs are funded for classes that range from five to twenty hours per week. Some programs run in closed cycles of a few months to a year, while others have ongoing classes with an open-entry admission policy. Class sizes are small compared to public school standards, usually consisting of ten to fifteen students. The classes are held in a variety of venues, including community centers, social-service agencies (e.g. homeless shelters), workplaces, libraries, prisons, community colleges, churches, and schools.[2]

Class Times

Class hours vary. Some classes that are part of workplace education programs begin as early as 6:00 a.m. Evening classes end as late as 9:30 p.m. Classes are offered during lunch time as well as during other parts of the morning and afternoon. The lengths of classes range from one-and-a-half to three hours, and classes meet two or more times per week. Classes are offered Monday through Saturday, although Saturday classes are quite rare. Table 5.2 describes the availability of Saturday classes throughout the state by type of class. Out of the approximately 1,500 classes offered in the state, excluding classes in correctional institutions, only twenty-five of them—nineteen ESOL classes and six ABE classes—are offered on Saturdays. This is less than two percent of the total classes. Someone who lives in the southeastern region cannot take an ESOL class on Saturdays. In all of Central Massachusetts, there is only one class offered on Saturday. The Boston Chinatown Neighborhood Center, which is considered by many an exemplary program, offers nine ESOL classes on Saturday.

When students enroll in classes, they are asked about their scheduling preferences. Their choices include six days of the week (Monday through Saturday) with a choice of three time periods per day: morning, afternoon, and evening. Students can pick more than one option. Their responses indicate what times are convenient for them. According to the intake forms in 1999, evenings were the best time and afternoons the worst. Saturday is a popular day, and we do not know if Sunday would be convenient, because students are not given that option. Although 6,959 students indicated that Saturday would be convenient for them, there are only twenty-five Saturday classes throughout the entire state. If each Saturday class served twenty students, which is considered large for ABE classes, only 500 students would be able to be served on Saturday. Across the state, 3,832 ESOL students indicated that Saturday would be convenient for them. Those who live in the Southeast are out of luck, since there are no ESOL classes in that region on Saturday. The most convenient time, of course, varies from student to student, but it is clear that students need classes every day of the week at a variety of times. The Department of Education should expand its Saturday offerings and become more responsive to the needs of the consumers.

Addressing the Language Challenge through Classes in English for Speakers of Other Languages (ESOL)

The education of immigrants has been part of the mission of the Mass. Department of Education since the late 1800s, when the "Division of Americanism" was charged with helping immigrants make the transition to life in the U.S. Today, teaching English to the state's newcomers remains a central function of adult basic education programs. In 1999, ESOL students

2 The *ABE/Adult ESOL Curriculum Frameworks: The Common Chapters*. Draft Document, The Massachusetts Department of Education, 1997, p. 6.

TABLE 5.2

Saturday Classes By Type of Class and By Region, Excluding Classes in Correctional Institutions

Provider Agency	City Location	Type of Class
GREATER BOSTON		
Assabet Valley Regional Vocational School	Marlborough	Advanced ESOL
Boston Chinatown Neighborhood Center	Boston	Beginning ESOL (4 Classes), Intermediate ESOL (5 Classes)
Bunker Hill Community College	Chelsea	Beginning ESOL
East Boston Harborside	Boston	Beginning ESOL (2 Classes)
International Institute of Greater Lawrence	Lawrence	Advanced ESOL
Lawrence Public Schools	Lawrence	GED
Mt. Wachusett Community College	Shirley & Ayer	Pre-GED
YMCA International	Brookline	Beginning ESOL (2 Classes), Intermediate ESOL
SOUTHEAST		
Bristol Community College	Fall River	GED
Cape Cod Community College	Nantucket	GED
CENTRAL		
Montachusett Opportunity Council	Fitchburg	Intermediate ESOL
WESTERN		
Mass. College of Liberal Arts	North Adams	Beginning Literacy (2 Classes), Beginning ESOL

** Greater Boston includes the following counties: Essex, Middlesex, Norfolk, Plymouth, Suffolk. Southeast includes: Barnstable, Bristol, Dukes, Nantucket. Central includes Worcester. Western includes: Berkshire, Franklin, Hampden, Hampshire.*

constituted slightly over half (56.3 percent) of all ABE students in the Commonwealth.

Three levels of ESOL instruction are offered (and are measured by student performance levels): beginning (SPL 0-4), intermediate (SPL 5-6), and advanced (SPL 7-10). ESOL instruction begins with oral language development and eventually includes literacy in English. Some programs are geared toward specific language communities. For instance, the Massachusetts Alliance of Portuguese Speakers (MAPS) provides ESOL and citizenship classes to Portuguese speakers living in Cambridge and Somerville, while La Alianza Hispana, an organization based in Roxbury, provides ESOL and Spanish Literacy services to the Latino community in Boston. (See page 52 for a profile of the Boston Chinatown Neighborhood Center.)

Most ESOL students are in beginning and intermediate classes. The average number of hours of instruction that ESOL students receive is higher than for students in the other programs, and more hours in class is associated with greater learning gains, as will become clear in the discussion of the effectiveness of adult basic education. Some of the real success stories of the adult basic education system are the immigrants who learn to speak English.

Addressing the Education Credential Challenge through Basic Literacy Instruction and GED Classes

Basic Literacy Instruction

In 1999, about one-quarter of all adult basic educational services were dedicated to the instruction of basic literacy. (See page 45 for a profile of the WAITT House, a program in Roxbury that offers basic literacy instruction.) There were 6,429 students who attended these classes (Table 5.1). Half of these classes were devoted to beginning literacy skills, aimed at students who read at or below the fifth-grade level. Students at this level often have a learning disability that has hindered their ability to decode the sounds of a word with the ease needed to read effectively.[3] Such students require a teacher who is well trained to teach at this level. The success of these classes also depends on students who have the motivation and time to work on

3 Steve Reder, "Literacy, Education and Learning Disabilities" (Philadelphia: National Center on Adult Literacy, University of Pennsylvania, 1995).

very basic reading skills. These adults usually need instruction in writing and basic math as well.

The other half of the students who received basic literacy instruction were at the intermediate level and were enrolled in pre-ASE classes. Adults at this level read at a sixth-to-eighth-grade level. These students need a good deal of practice in reading, writing, and math. They should be learning to read more frequently, to read many different kinds of materials, to read more challenging materials than they have been reading, and to discuss critically what they have read.

GED Classes

In 1947, Massachusetts adopted the General Education Development test (GED) as an alternative way to earn a high school credential, and today this test is the most common alternative way to do this. The GED consists of five sections that measure writing skills and knowledge of social studies, science, literature, the arts, and math. To pass the GED, an adult must achieve a minimum total score and a minimum score on each of the five sections.

A partnership between community colleges and employers offers the best opportunity to meet the New Literacy Challenge.

A newly revised version of the GED is due for release in 2002. The new test is expected to feature a more explicit emphasis on cross-disciplinary skills, such as information-processing, problem-solving, and communication. The mathematics section will demonstrate a greater emphasis on data analysis, statistics, and probability and will allow for the use of calculators.

Every year, approximately 17,000 adults register to take the GED test in Massachusetts, and about 11,000 pass. This success rate helps to offset the average rate of 8,400 high school dropouts every year.

While many GED test takers choose to study on their own, preparation for the GED test is offered through adult basic education. In 1999, 3,778 students (or 16.2 percent of adult students) were enrolled in courses to help them prepare for the GED test (Table 5.1). Because of limits in data collection, we do not know how many students enrolled in these classes took and passed the GED test. Currently, the state only knows if a student obtains his or her GED when the student takes the test while enrolled in a class and chooses to tell his or her teacher. Because the different departments within the Department of Education do not share information, the state has no way of knowing about students who obtain their GED after leaving or completing their classes. Because of this limitation, we cannot know the effectiveness of GED classes, although it is certain that the data we do have are likely to underrepresent the effectiveness of GED classes.

Addressing the New Literacy Challenge

A challenge exists concerning how best to reach and assist the substantial number of workers who have a high school credential but who still lack the basic skills needed for today's economy. Currently, ABE is geared toward helping immigrants learn to speak English and helping students gain basic literacy skills. The most advanced classes in the literacy sequence are GED classes, and these classes prepare students to earn high school credentials. Yet the 667,000 workers we have identified with low literacy skills already have a high school credential. While they might benefit from a GED class, it is not practical on a large scale to direct workers with a high school credential to GED classes. Addressing the New Literacy Challenge through the current ABE system would require the creation of a new sequence of classes, which we don't believe is necessary or wise because an institution already exists that is well-positioned to undertake this challenge: the community college. A partnership between community colleges and employers offers the best opportunity to meet the New Literacy Challenge.

Currently, community colleges offer what is called "developmental education" instruction. Although developmental education is primarily understood as college preparatory education, it is more than that. Community colleges offer developmental education instruction in collaboration with companies to upgrade workers' skills. These classes are typically located at the workplace and are privately funded by businesses. The employers' participation is critical to help identify workers who would benefit from developmental education. Many of those who might benefit the most are hard-working people who would not be likely to perceive themselves as needing help. Even if they do, they are not likely to know how or where to get the right type of help. The employers provide the important bridge from the workers to the classes that will upgrade their skills.

The geographical distribution of community colleges enables them to reach companies across the state, and they have an existing infrastructure that could be

CASE STUDY #1

WAITT House BY NEIL MILLER

Since 1983, WAITT House has seen 351 of its graduates receive high school diplomas. That is no mean feat. In fact, WAITT House claims the largest number of graduates of any adult basic education program in the city of Boston. Located on two floors of a red-brick Sisters of Charity convent a half a block from the intersection of Dudley Street and Blue Hill Avenue, WAITT House serves two of Boston's poorest neighborhoods—Roxbury and North Dorchester. It was founded in 1979 by the Sisters of Charity as a pre-school and day-care center. The focus switched to adult basic education in 1983 when Barbara Bush, wife of then Vice-President George Bush, came to WAITT House and inaugurated the city of Boston's Adult Literacy Initiative. Currently, it has 120 students a year and a budget of about $420,000.

WAITT stands for "We're All In This Together," and Stephen Hanley, the executive director since 1988, takes that acronym very seriously. "Literacy offers tangible skills that open doors," he says. "It creates hope and self-esteem." In his view, adult literacy is a way of addressing a variety of issues in people's lives from filling out a job or a credit-card application to writing a note to a child's teacher in proper English to voting.

The program has three levels: up to fourth grade, fourth grade to eighth grade, and the high school diploma program. The beginning level has the smallest class enrollment. The high school diploma program has thirty to forty students. This year, Hanley says, more people showed up in need of basic literacy skills than in previous years, and a new section was added at the beginning level. Waiting lists and waiting times are long. The average number on the waiting list is about a hundred. Prospective students can find themselves on a waiting list for anywhere from three months to a year.

Students have to be nineteen to enroll in the program—most are in their late twenties to early forties. Only 25 percent are male, up from three percent when Hanley first became director of the program. They are primarily African-American (native-born), Cape Verdean, Hispanic, and Haitian, with a smattering of West Africans and Caribbeans.

According to Hanley, many of the students who come to WAITT House are not native speakers of English, but they don't fit the traditional ESOL classification, either. Essentially, they speak "broken English." The nearby La Alianza Hispana refers people to WAITT House who are too advanced in spoken English for its ESOL program. Adult basic education (the second phase) is "a good transition" for them, Hanley says.

The adult basic education program attempts to provide students with general skills: the foundations of reading, writing, grammar, and math. In the process, Hanley says, WAITT House attempts to connect students "to the real world—and the possible world." One teacher has used hip-hop music as a teaching tool. In math class, students might practice long division by calculating Red Sox pitcher Pedro Martinez's earned run average. There are field trips—like one to a schooner that brought Cape Verdean immigrants to the United States. "We try to integrate mechanics and real life," says Hanley.

WAITT House provides its students with an environment to broaden their horizons and shows them how to use educational techniques and tools in their daily lives. It encourages them in a pragmatic way so that when they leave class, the students know that what they learned in class can be applied directly to their lives.

The high school diploma program includes classes, independent study, research, career development, and computer literacy. This year, ten students obtained their high school diplomas, participating in graduation ceremonies with graduates from other adult education programs in the city of Boston.

All classes take place between 9 a.m. and 1 p.m., with students spending fifteen to twenty hours a week in class. Hanley concedes that the time commitment is "quite a bit for an adult," but is necessary to make significant progress, he argues. There are three terms each year, and students can complete six terms over two years, moving up four grade levels. There is not enough funding for an evening program, although demand exists, according to Hanley. As a result, most WAITT House students either work a 3 to 11 p.m. shift or the "graveyard shift"—or they might be between jobs.

Some 80 to 85 percent of students complete the aspect of the program in which they are enrolled. (Younger men in the high school diploma program tend to do the poorest, says Hanley.) The retention rate was 90 percent before the passage of welfare reform, which moved many students into the work world. As a result, they didn't have time for an afternoon literacy program. For those who work during the class period, there is some recourse. The Jamaica Plain Community Center offers an ABE program, which WAITT House students can attend. Still, Hanley says, "We need an evening program in this neighborhood."

Students drop out of the program or miss class for a variety of reasons: new jobs, shift changes, personal problems. The spring-summer term can present particular problems to parents whose children are in school all year long and are suddenly home for the summer. "That is the tough part," says Hanley, referring to the non-academic factors that impede a student's progress. If students leave, the "door is open," but they have to prove that they are committed to the program if they want to come back a second time.

WAITT House's programs are free to all students. Nearly 60 percent of its budget comes from federal and state funds through the Massachusetts Department of Education; money from the Economic Development and Industrial Corporation of Boston, private grants, and fundraising activities like raffles and read-a-thons make up most of the rest. WAITT House collaborates with La Alianza Hispana (whose computer labs it uses) and with the Dudley Library Literacy Center (where some classes are held). The program employs seven full-time teachers, plus two former graduates who work as an outreach counselor and a teaching assistant. Full-time teachers are more likely to stay and having former students on staff helps with retention. And the outreach counselor does a lot more than just "marketing," Hanley notes. He or she helps prospective students break down barriers to entering the program, guide them through orientation, assessment, and testing, and offer support services when necessary.

Hanley insists that WAITT House is very much a part of the Roxbury-North Dorchester landscape these days. In the 1980s, adult basic education carried something of a stigma, he says. People would ask themselves, "Should I go back to school? People will laugh at me!" Not so today. "The thing now is just getting the word out," he says.

CASE STUDY #2

Harvard Square Workplace Program BY RICHARD JUST

On a Tuesday afternoon in late June, Javier (not his real name) sits in the lobby of Christ Church in Cambridge. The forty-year-old Colombian immigrant holds a Spanish-English dictionary and a small notebook. In two hours, he will begin his shift as a busboy and preparation chef at a local restaurant. For now, though, he wears a faded blue baseball cap that reads "Workplace Education: Learning on the Job"—and that is exactly what he will do for the next two hours.

Shortly after 3:00, Elizabeth Bryer strides into the building and greets Javier warmly. Bryer is one of three English for Speakers of Other Languages teachers who work with the Harvard Square Workplace Program in Cambridge. The program consists of eleven businesses that have partnered with Cambridge's Community Learning Center to offer ESOL classes for their employees, most of whom speak Brazilian, Haitian, or Spanish.

Bryer and Javier spend the next two hours working through short stories and grammatical constructions. Normally the class, which meets every Tuesday and Thursday, draws anywhere from two to ten students, but today it is just Javier. And that is not surprising, says Bryer. Javier has been her most consistent student since she started teaching with the program last October. He also writes proficiently, unlike many of her students who are barely literate in their native languages. The Colombian native is a middle-level English speaker.

Bryer kicks off class with a review of verb tenses. "Every day, I bring a pencil to class," she says slowly, enunciating each word as she writes it on the whiteboard. "Yesterday?"

"Yesterday, I brought a pencil to class," Javier responds.

"Nice," Bryer says with conviction, using a compliment she will repeat again and again throughout the two-hour session. "Tomorrow?"

"Tomorrow, I'm going to bring a pencil to class," Javier answers. And on they proceed like this for fifteen minutes, working their way through a long list of verbs and sentences. Bryer, who sometimes visits her students at their jobs to check up on them, divides her classroom time between teaching grammar and stressing workplace-survival English.

ESOL classes offered by this program meet for two-hour sessions twice each week, or four hours total. Half the hours are treated by employers as paid-release time, meaning that employees are compensated as if they were at work. The program provides three levels of ESOL instruction, with each class serving between eight and fifteen students. The classes take place at different sites throughout Cambridge and class times are kept flexible in order to accommodate the work schedules of participants. Most of the businesses that participate are restaurants, hotels or other service-industry enterprises.

"It gives these people an incentive to work for me," says Ellen Schwartz of Bruegger's Bagels, one of the program's sponsors. "It's great for them, and specifically, they start with words that are related to the restaurant scene." Twenty Bruegger's Bagels employees have participated in the program since it was launched two years ago. Currently, five of Schwartz's employees take ESOL classes through the program.

The program's workplace education coordinator, Joseph Passeri, says businesses have a variety of incentives to encourage employees to enroll in English classes. Employees emerge from the program better able to communicate with customers and co-workers, and more capable of reading safety regulations, training manuals, and other documents, he explains.

"Some people are promoted because their skills have improved," Passeri notes. Indeed, one of Schwartz's employees, who began working at the bagel store as a cashier nine months ago, is now an assistant manager thanks to the English skills she acquired by attending ESOL classes. And at John Harvard's Brew House in Cambridge, where sixteen employees have participated in ESOL classes during the last two years, one staffer now runs a kitchen shift by himself as a result of his improved English, the restaurant's general manager says.

Joy Orzechowski, the business liaison for Cambridge's Office of Workforce Development, helped launch the program two years ago after hearing managers of numerous Cambridge hotels and restaurants lament their workers' poor grasp of the English language. Orzechowski, succeeded in winning a DOE grant, which provides $30,240 per year. Though originally set to expire after three years, the grant might now be extended to cover five years.

The program employs two instructors in addition to Passeri, one of whom is Bryer. Businesses do not underwrite the program itself, but they do incur the cost of compensating their employees for paid-release time.

Getting the program off the ground was not easy, according to Orzechowski. She launched an extensive publicity effort, which included a mass mailing to members of the Harvard Square Business Association, an open house, and articles in various trade association newsletters. She even went door-to-door to meet the managers of Cambridge's restaurants.

For their part, employers used a variety of methods to recruit students, displaying posters in their restaurants and speaking to employees whom they believed would benefit from the classes. Whether an employee can participate in the program is left to the employer's discretion, but Orzechowski says she cannot recall a single instance of a potential student being turned away.

While participating businesses have been supportive, their enthusiasm has not always been steadfast. The number of participating companies tends to fluctuate, and though it now stands at a robust eleven, it has also dipped as low as four in the past. And as restaurant and hotel managers come and go—each with a different degree of devotion to workplace education—the number of students they send to enroll in the program often varies.

"Definitely the consortium model is very difficult because of how many different companies you're working with," Orzechowski explains. "The scheduling has been the biggest challenge." Indeed, Orzechowski cautions that the consortium model is easiest to replicate in geographically dense locations like Cambridge, where employees can walk from their jobs to classes.

Of the fifteen students Bryer says she has taught during her nine months with the program, only four are still taking classes. Others did not necessarily give up, she explains, but may have merely changed jobs or work schedules.

Javier, however, has been able to stay. Words still come to him laboriously—he has, after all, lived in the United States for just one year—yet he shows considerable determination and patience each time Bryer prompts him to speak.

At 4:45, Bryer cuts class short so Javier can be at his restaurant by 5:00, part of his day's work already behind him.

expanded. Because they are doing this type of work on a smaller scale, they already have some expertise in the area. The community colleges are not doing enough, though, and their willingness to engage in this type of work is uneven across campuses. More leadership is required. Rather than being tangential to the mission of community colleges, we believe that developmental education for workers and others who need to upgrade their skills (and not necessarily with the goal of attaining a higher education degree) should be explicitly incorporated into the mission of community colleges.

Expanding developmental education through aggressive outreach offers the most promising way to address the New Literacy Challenge. We believe this should be done through a public-private partnership. The Legislature recently appropriated several million dollars to expand developmental education. It appropriated $2.9 million to establish and implement a new Community College Developmental Educational Program, and it also appropriated $2.1 million to establish a new Community College Workforce Training Incentive Program. These programs should provide a strong incentive for community colleges to expand their developmental education programs. To encourage companies and help share the cost, the state should establish a Basic Skills Training Tax Credit. Adopting this legislation would encourage companies to invest in their workforces and ultimately enhance the competitiveness of the Massachusetts economy.

Other Specialty ABE Programs

Over the years, different specialty programs that focus on the needs of specific populations have developed out of an expressed need by students and through legislative mandates. Here we focus on four such programs: family literacy, workplace education, transitional education, and corrections education.

Family Literacy

The Massachusetts Family Literacy Coalition estimates that children in 113,000 families in Massachusetts have at least one parent who cannot read aloud to them. Children in 264,000 families have parents who can read at a basic level but have difficulty helping their children with homework.[4] Family literacy programs are designed to provide literacy services for these parents and their children. The Massachusetts Family Literacy Consortium defines these services as "coordinated learning among different generations in the same family which helps both the adults and children reach their full personal, social and economic potential."

Interest in family literacy programs has increased recently, partly because of the impact these programs can have on the next generation—the children. The greatest indicator of a child's academic success is the academic level of his or her parents. Studies find that success in learning to read in school is related to the preparation and support provided by parents before children enter school and while they are students in the first three grades.[5]

In 1999, between 500 and 600 people participated in family literacy programs. This number includes participants in federally funded Even Start Family Literacy programs as well as students in state-funded programs.

Workplace Education

In recent years, there has been a great interest in workplace education. The idea of workplace education is simple: basic skills classes offered through the workplace within the workplace context. This simple idea has caught on. It suits employers by helping improve the basic skills of their workers, a widespread need that employers have long recognized. Research suggests that there is a substantial productivity payoff to workplace literacy programs.[6] It also helps workers by teaching them basic skills that often translate into opportunities to advance in their jobs.[7]

Workplace education usually takes place at the work site but can also be offered at a local community center or union hall. When possible, providing classes at the work site is preferable because of the convenience for participants. Moreover, on-site classes help participants overcome traditional barriers, such as lack of childcare. On-site classes also help solve the problem of transportation to and from class and eliminate the additional time and complications involved in traveling to another location.

Support for workplace education comes from a variety of sources, primarily the Massachusetts Department of Education and the Department of Labor and Workforce Development's Division of Employment and Training (DET). In addition, labor unions play an active role in helping to define priorities and implement effective services. (See page 51 for a profile of a SEIU program.) The Department of Education currently supports workplace education programs at forty-eight work sites and union facilities that provide basic skills instruction to an estimated 2,700 workers.

4 See the Mass. Family Literacy Consortium's Web site: http://www.doe.mass.edu/familyliteracy/flinfo.html

5 Catherine Snow, Susan Burns, and Peg Griffin, *Preventing Reading Difficulties in Young Children* (Washington, D.C.: National Academy Press, 1990).

6 See Kevin Hollenbeck, "The Economic Payoffs to Workplace Literacy" (Kalamazoo, Mich: W.E. Upjohn Institute for Employment Research, August 1993); Mary Moore and Michael Stavrianos, "Review of Adult Education Programs and Their Effectiveness," A Background Paper for Reauthorization of the Adult Education Act" (Princeton, NJ: Mathematica Policy Research, Inc., August 1995).

7 Alan Krueger and Cecilia Rouse, "New Evidence on Workplace Education," *Journal of Labor Economics* 16 (1), 1998: 61-94.

CASE STUDY #3

NYPRO Institute BY NEIL MILLER

At Nypro Inc.'s Nypro Institute in Clinton, the byword is plastics. That is true, whether you're talking about the company's relatively narrow training classes or its broader workplace education programs. The institute offers a certificate program in Plastics Technology for incumbent workers. Meanwhile, in the Adult Workplace Program's ESOL classroom, a wall display highlights "Injection Molding Part Defects," listing definitions for plastics terms such as blush, smear, warpage, brittleness, and mold deposits.

All this emphasis on plastics isn't surprising. Nypro is a worldwide manufacturer of custom precision injected molded components, ranging from cell phones and pagers to asthma pumps and Lady Gillette razors. It's a $600 million corporation that employs 6,500 people in twenty-four locations in eleven countries. Its international headquarters are located in an old carpet factory in Clinton that once produced carpets for the Titanic and the Taj Mahal. An abandoned property as recently as 1975, today the Clinton plant employs 1,100 workers.

It was back in 1978 that Nypro started offering plastics technology courses to its employees and area high school students as part of a school-to-work program. The program attracted the attention of nearby Fitchburg State College. Soon, in association with Fitchburg State, the company was offering a certificate in plastics technology not just to its own employees but to employees of nearby companies as well. The Nypro Institute was born. The eight plastic tech courses, currently offered in the evening from 6 to 9 p.m., are almost entirely taught by Nypro technical staff—"active industry professionals who all have day jobs," according to Richard J. Hermann, the institute's director. "That keeps them fresh and up-to-date with what they are teaching." The institute boasts two large classrooms and a computer center in Nypro's corporate headquarters.

About a third of the current two hundred or so plastic technology students are Nypro employees seeking to upgrade their skills and qualifications. The rest come from companies ranging from major Boston-area employers like Polaroid and Gillette to smaller firms in western Massachusetts and Connecticut. But by far the largest number work at more nearby companies, some of which are competitors of Nypro in a part of the state where there are numerous plastics companies. Students from seventy-five firms have participated so far. "We may be training our competitors but it is not a threat to us," says Hermann. "We have to compete in a highly specialized niche."

While the institute's plastics technology program is open to workers from other companies, that isn't the case with the institute's Adult Workplace Program. Only Nypro employees participate in those courses. The on-site workplace program began with funding from a state Department of Education grant several years ago and had been contracted out to the Clinton Adult Learning Center. It was incorporated into the institute a year ago. The program includes reading, writing, grammar, and math and seeks to combine basic education skills with ESOL. Most of the students who come from countries like Brazil, Vietnam, the Dominican Republic, and the Congo have some "street English," according to corporate trainer Albert Mercado. So they don't need a basic ESOL course.

Classes are held four hours a week, and workers receive their hourly salary for half of the time. (There is no cost to students.) To encourage participation, classes take place before the start of the second shift, from 1 to 3 p.m., and at the end of the first shift, from 3 to 5 p.m. There are also weekend classes for those on the weekend shift. There are three different levels—basic beginner, intermediate, and advanced—but all participate in the same class, according to Mercado. Classroom and homework assignments vary from level to level, he says. Twenty-two out of thirty-three participants completed their classes this year. There is also a GED program from which two people received high school diplomas this year.

The Institute has been working hard to "plasticize" these classes in the past year since taking them over, according to Hermann. "We are targeting competency, but we are trying to make them relevant to the workplace," he says. So in math class, for example, formulas and calculations relate to plastics. Students learn to read work instructions and stock statements (Nypro is a worker-owned company) as well as the proper procedures for telling your boss you have been out sick. They learn to use copiers, fax machines, and pagers. "We teach them the foundations," says Mercado, himself a long-time Nypro employee. And Hermann claims that because of the increasing emphasis on workplace relevancy, employees who took the course in the years before "plasticization" have returned for a second round.

At a factory that runs twenty-four hours a day, seven days a week, many workers have a hard time fitting in adult education courses. There are nine shifts, and the "mix of production and supervisory schedules can make enrollment complex," Hermann concedes. "People sign up and then they get promoted or they get put on a new shift. There are daycare issues. These are real people with real problems." If someone on the evening shift wants to take a plastics technology course (offered from 6 to 9 p.m. only), that can be difficult. In that case, "They have to work it out with their supervisor," he says.

The Nypro Institute's budget is near $1 million a year. Tuition fees for the plastics technology courses cover less than half of the budget, according to Hermann. As a result, Hermann says, the institute "doesn't come close to operating as a profit center." He adds, "This is an investment in our workforce. Part of the reason Nypro has managed to survive and thrive is that we have recognized the added value in using new technology. And you can't do that with unskilled workers."

Nypro Institute has big plans for the future—including adding two new classrooms. And in the last two years, the institute has started to put its plastic tech curriculum online, in conjunction with the University of Massachusetts at Lowell. More than 400 students worldwide have enrolled since the online program's inception, according to Hermann. Right now, there are more students in the online program than in the evening-plastic technology courses. Online education still has kinks to work out as it evolves and improves, he concedes. And it appears to be more feasible for plastic-tech courses than for basic literacy and math courses, which require more individual attention. But, Hermann argues, online education might eventually turn out to be a way to overcome those "real-life problems" that many workers face when it comes to finding a place for adult education in busy lives.

Recently, a new source of public funding has become available with the creation of the Workforce Training Fund (WTF). In 1998, the state legislature reduced unemployment insurance contributions in Massachusetts by $121 million and at the same time created this fund with an annual $18 million contribution by employers.[8] Although the fund is available for basic skills instruction, in the first four rounds of funding requests, only about ten percent of the proposals requested funds for literacy or ESOL classes.[9]

Research suggests that there is a substantial productivity payoff to workplace literacy programs. They also help workers by teaching them basic skills that often translate into opportunities to advance in their jobs.

These public funds have also successfully been used to leverage private investment in workplace education. For instance, one of the requirements for programs funded by the Department of Education is that employers offer paid release time for employees for at least one-half of the class hours or pay equivalent stipends. This, of course, makes it easier for students to attend more hours of class and, thus, learn more.

Other employers have also begun to offer basic skills instruction privately as a benefit to their employees. Harvard University's "Harvard Bridge to Learning and Literacy" illustrates this approach. This free, on-site program offers literacy classes, GED classes, and classes in English for Speakers of Other Languages (ESOL) for the university's lowest paid employees. In its first year, thirty-eight Harvard Faculty Club workers participated in classes. When the program is fully launched, it is expected to serve about 500 employees per year with an annual cost to Harvard of $1.4 million.[10]

Participants in workplace programs appear satisfied with workplace programs. A recent evaluation found that ninety-one percent of the participants reported that they had learned what they had wanted to learn in the course, and many were interested in taking additional courses. Moreover, many reported other benefits such as increased responsibility or a pay raise.[11] This is consistent with our case studies. Several workers, both at IEI and Harvard Square Consortium, were promoted as a direct consequence of the increased skills they gained in classes (See this chapter's profile of the Harvard Square Consortium on page 46).

Employers who invest in increasing their workers' skills also recognize the benefits. A recent Conference Board study interviewed employers about the increased skills that resulted from workplace education programs. The study found that employers believed that increased skills had both direct and indirect economic benefits. The direct benefits included: increased output, reduced time per task, reduced error rate, a better health and safety record, reduced waste in production of goods and services, increased customer retention, and increased employee retention. There are also a variety of indirect economic benefits, such as improved quality of work, better team performance, and improved capacity to cope with change in the workplace. The employers definitely saw the benefits. In fact, ninety-eight percent of the employers reported at least one benefit that resulted from workers' improved skills.[12]

Many employers continue their programs after public funding has ended. In Massachusetts, Nypro chose to continue its workplace program after its state funding ended (See this chapter's profile of Nypro on page 48). Employers find both direct and indirect benefits from upgrading their workers' skills. In addition to increased profits, they credit the programs with improving the quality of work, increasing morale, and leading to better team performances.[13] Workplace programs bring workers closer together. Often, for the first time, workers speak a common language. They also work better as a team because of their shared experience of participating together in a class (See also this chapter's profile of IEI on page 55). Perhaps not surprisingly, the employers we spoke with at IEI, Nypro, and businesses in Harvard Square were enthusiastic proponents. In fact, the director of Nypro's program credits Nypro's ability to survive to the company's investment in upgrading its workers' skills.

Transitional Education

A new service in adult basic education called transitional education was begun in 1992. This service aims to help adults who complete ABE classes make the transition to further academic education in college or vocational skill training. This transition is necessary, because research suggests that GED graduates do not fare as well in college as regular high school graduates.[14] Transitional education programs usually involve collaboration between adult basic education programs, community colleges, and training programs. These programs help adults to build their basic skills

8 *Answering Your Questions On The Massachusetts Workforce Training Fund* (brochure), The Massachusetts Workforce Training Fund, Division of Employment and Training, Boston, 1999.

9 Telephone conversation with Jane Kadlubkiewicz, May, 2000.

10 For a further discussion of the program, see the "Harvard University Gazette," May 4, 2000.

11 Mary T. Moore, David E. Myers, and Tim Silva, *Addressing Literacy Needs at Work: A Profile of Institutions, Courses and Workers in the National Workplace Literacy Partnerships*, Mathematica Policy Research, Inc. for the U.S. Department of Education, Planning and Evaluation Service, 1997. See also Kevin Hollenbeck, *Classrooms in the Workplace* (Kalamazoo, Mich.: W.E. Upjohn Institute for Employment Research, 1993); Alan Krueger and Cecilia Rouse, "New Evidence on Workplace Education," NBER Working Paper No. 4831, National Bureau of Economic Research, Cambridge, Mass., August, 1994.

12 "Turning Skills into Profit: Economic Benefits of Workplace Education Programs," The Conference Board, Inc., New York, 1999.

13 *Ibid.*

14 Educational and Labor Market Performance of GED Recipients, U.S. Department of Education, 1998.

in ways that are specific to postsecondary education and to learn strategies that can help them be successful in college-level courses.

The federal funds that supported the state's transitional programs, called the Massachusetts English Literacy Demonstration (MELD), ended in December, 1994. MELD was supposed to be a three-year project, but funds were not distributed in the final year, which prevented many of the programs from following through with assessment and evaluation. The state Department of Education provides some funding for transitional programs, and some of the original MELD programs, such as Boston Chinatown Neighborhood Center's collaboration with Bunker Hill Community College and the Asian American Civic Association, provide their students with transitional support: counseling, integrated curricula, and visits to the community college. It is important that ABE students are directed toward other training and educational opportunities. This could be accomplished through closer links between agencies and community colleges, but if this is not possible, the state should consider expanding funding for transitional programs.

The current conditions for teachers of adult basic education do not bode well for a long-term commitment to the profession.

Corrections Education

Currently, over 20,000 adults are incarcerated in state and county facilities in Massachusetts. In 1999, 989 of them participated in adult basic education programs. They account for four percent of adult basic education students. This population is important for several reasons. Approximately ninety percent of all incarcerated adults eventually return to society. Half of these adults lack a high school diploma, and even among those who have a high school credential, many lack the skills expected of a high school graduate. Many adults in the corrections population will return to economically deprived neighborhoods. When jobs are scarce or pay low wages, those without an adequate educational foundation may join the ranks of repeat offenders. Nationally, seventy-seven percent of those who have been released from prison will eventually return to prison.[15]

Some studies have shown that participation in educational programs can reduce the recidivism rate, perhaps by as much as twenty-five percent.[16] Therefore, corrections education may actually save the state money. The average cost to incarcerate an adult for one year is $28,000, whereas the average cost per year per student to provide adult basic education instruction is $1,668. Thus, if adult basic education keeps just one inmate out of fifteen from coming back to prison for just one year, it has more than paid for itself.

The Teachers of Adult Basic Education

"Thank God I met Susanne, my teacher. She is the one who told me about this school. She encouraged me and gave me the strength to come to school. Today is my second day and I feel like I am learning new things already. I want to continue to attend school as much as I can. I see the light for me to learn to read and write. I want to say thanks to all my teachers who take the time to teach us."

—Everton Dixon, student at Read/Write/Now, Springfield, Mass.

The people who face the enormous task of teaching basic literacy skills to adult students are obviously a critical element to the success of ABE. For teachers to perform their jobs well, they need training and experience. Training and experience typically come through a commitment to a long-term career in adult basic education. In order to encourage such a commitment, stable employment, good pay, and benefits must be offered. Unfortunately, the current conditions for teachers of adult basic education do not bode well for a long-term commitment to the profession.

Number, Race, and Gender of Staff

In 1998, ACLS-funded programs employed 1,535 staff members. This number includes teachers (66.3 percent), administrators (13.8 percent), counselors (5.6 percent), and paraprofessionals (14.3 percent). Of the 1,018 teachers, 85 percent were lead teachers and the remainder assisted these primary teachers. Among the lead teachers, 84 percent of teachers were white, 7.5 percent were Hispanic, 6.5 percent were African-American, and 2 percent were Asian. Seventy-five percent of the teachers were women.

Full-time vs. Part-time Status of Staff

Most of the ABE teachers are part-time. The system has been committed to increasing the number of full-time positions, and the number of full-time professionals and paraprofessionals, including administra-

15 *An Adult Basic Education Partnership between Communities, Adult Learning Programs and The Massachusetts Department of Education.* The Commonwealth of Massachusetts, Massachusetts Department of Education, 1996. See also BOTEC Analysis Corporation, *Criminal Justice In Massachusetts: Putting Crime Control First* (Boston: The Massachusetts Institute for a New Commonwealth, 1996).

16 *An Adult Basic Education Partnership*, p.19.

CASE STUDY #4

SEIU Worker Education Programs BY NEIL MILLER

One of the most far-reaching adult basic education efforts in Massachusetts is the Service Employees International Union (SEIU) Local 285's Worker Education Program. The SEIU is the country's largest labor union. The 9,300 members of Local 285 statewide are primarily health care workers in hospitals and nursing homes, home care workers, and public-sector employees. Currently, Local 285 has some sixteen classes for its members scattered around the state, at workplaces and at the union hall in Boston.

The Worker Education Program started in 1991 when federal money became available for labor-management projects. In its early days, it focused on skills like radiation technology and medical terminology in conjunction with local community colleges. In 1995, federal money moved into the area of workplace literacy. The new approach was aimed at workers who didn't have a high school education. A union could apply along with "employer partners" for funding to set up site-specific programs. Local 285 did so. When federal money dried up in 1997, the state's Department of Education took up the slack.

Today SEIU offers classes for its members on-site at unionized employers such as UMass-Boston, the Boston Medical Center, and the Lynn Community Health Center. Nursing homes such as the Edgar P. Benjamin Healthcare Center in Boston's Roxbury neighborhood and the Providence Health Care Center of Springfield have classes on-site, as well. In addition, four classes take place at SEIU's union hall where the union itself functions as the "employer partner" for workers who don't work at common work sites where classes are offered. The program's current budget is $450,000, including $250,000 from the Massachusetts Department of Education and $50,000 from the Department of Employment and Training.

Classes have seven-to-ten students and run the gamut from ESOL and basic literacy to high school diploma courses, computer training, and writing and communication skills, according to Jenny Lee Utech, director of the Worker Education Program. Class levels vary, too. At UMass-Boston, where students tend to have higher skills, students study "paycheck economics," writing, and public speaking. At the Lynn Community Health Center, a fall, 1999 writing and communications skills class read Dominican-born author Julia Alvarez's novel *In the Time of the Butterflies*. Meanwhile, at nursing homes where many immigrant workers are employed, classes tend toward the more basic ESOL.

Overall, the two most popular classes are high-school-diploma and computer courses, according to Utech; there are often waiting lists for these. English gets a "healthy turnout," she says.

Courses run from September to June. As is the case with many workplace classes, they generally take place in a two-hour period towards the end of one shift and the beginning of the next.

Under the Department of Education mandate, employers offer one hour of paid release time, while the second hour represents the employee's own time. Because home-care workers are scattered all over, they don't get release time. They receive a $250 completion bonus at the end of each semester in lieu of release time. (Courses for home-care workers take place at the SEIU union hall; their employer partner is the Women's Educational and Industrial Union).

Offering such courses on site is harder than it might seem. These days, real-life health care settings are frequently characterized by short staffing and nursing shortages. "The challenge is getting released off the floor to attend classes," Utech notes. Sometimes, employees on the same floor or in the same department have to take turns being in courses because of staffing problems. The result, she says, is "a lot of juggling for students and teachers and administrators." Utech adds, "The motivation is high. It is the logistical stuff that gets in people's way."

Still, despite logistical problems, these classes are popular with many workers who have never before studied in community settings. "In nursing homes particularly, you get people who have a full-time and a half-time job;" Utech notes. "They have families. They are on the run. This kind of program can capture them. They can squeeze in classes."

Some nursing homes see the Worker Education Program as offering a way of coping with the shortage of nurses and certified nursing assistants (CNAs). At the Benjamin Healthcare Center in Roxbury, for instance, the aim is to upgrade the skills of potential nurses and then persuade them to return to work there after they receive their training, according to Utech. As for CNAs, the nursing home hopes to attract and keep them by offering educational opportunities. The same goes for the Providence Care Center, a Springfield nursing home. "They are motivated by a desire to offer something to their workers," Utech says. "And the program is free to employers. Their cash match is release time—that's all. They don't write a check."

The motives of the union are somewhat different. Local 285 sees the Worker Education Program as a way to "build opportunities for the membership to improve the situation at work," according to Utech. A more-educated workforce can strengthen the union's position when it comes to pay raise negotiations, she believes. The classes "help connect them to the union," she adds.

Not surprisingly, the courses in which the SEIU itself doubles as the "employer partner" tend to use union-related issues as a basis for teaching. A math exercise might involve understanding contract language; the history of farmworkers'-union struggles would be used as a teaching tool in an English or communications class.

Whoever the employer partner, classes tend to focus on issues of work. "There is always this pull: what the workers want to study, what the employer wants them to study, what the union wants," Utech notes. "The workers usually want broad programs. They come in with traditional ideas of education. The best employers understand that these skills will help overall."

Utech says there is a great demand among union members for educational programs. She often receives phone calls from workers who are disappointed that these programs are offered only at certain sites. So Utech's long-term goal is to build a training and education fund that could make classes more widely available. But that requires more money than the program currently has. "We are not very close, but getting closer," Utech says.

CASE STUDY #5

Boston Chinatown Neighborhood Center BY RICHARD JUST

Chalk-dusted hands resting on his hips, Jian Lin turns to face his mid-afternoon class. The Chinese-born instructor is about to begin a two-hour English for Speakers of Other Languages seminar—the first of three he will teach today on the musty third floor of the Boston Chinatown Neighborhood Center—and, as always, he has only one goal in mind: getting his students to speak English.

"When I took over this class, most students didn't want to talk," he would explain two hours later, after the conclusion of class had sent his adult pupils hurrying to their jobs in Chinatown restaurants and garment factories. "Speaking skills are the most difficult skills for them to get."

But speak they do—tentatively, yet also with quiet determination. They are there by choice, surrendering two hours of every Monday, Tuesday, Wednesday, and Thursday—time that might have been spent with children, husbands, or wives—to learn a difficult language that bears no grammatical resemblance to their own.

"Their main goal here is to get a better job," Maryana Huston, the center's ESOL director, says. "People in their forties and fifties—and some are still busing tables."

Lin himself emigrated from China in 1985, and with twenty-five years of teaching experience in his native country and a master's degree in education from Boston College he might seem remarkably overqualified for his occupation. And he is the rule, not the exception. "They're more qualified to teach than I am," Huston says, noting that her professional staff of teachers gets paid $16.72 per hour to start. "They know their subject inside and out." Moreover, it is clear they take their jobs seriously. Dressed in a tie, his black hair neatly combed to one side, Lin begins the day's lesson with a reading exercise.

"Sam's is a clothing store," he says, his accent distinct but his enunciation confident and precise. Then, quickly, with a hint of both drama coach and drill sergeant in his voice, he chants, "One, two, three," spiking each successive word with more emphasis than the one that came before it.

Lin's ten students do not miss a beat. "Sam's is a clothing store," they repeat in unison, reading from their textbooks. "There is a sale at Sam's today. Men's, women's and children's clothes are cheap. Many people are in the store."

Nine voices chant the three-paragraph story in near-perfect unison, while one middle-aged student—glaring at his book, head resting in his hands—remains half a word behind the rest of the group. He says each word quickly in an effort to catch up. But he doesn't. And the effect is a sort of syncopated recitation, with an offbeat that is at once self-conscious and apologetic.

Later in the afternoon, the same student will have trouble with other exercises. With each mistake, his glare intensifies. But Lin offers nothing but praise. This is, after all, a beginning class—its participants have been studying English for only six months—and the student is at least making an effort.

"I want them to speak," Lin reiterates later, and for two hours, the students answer his oft-repeated battle call to recitation—"One, two, three"—with English that is occasionally hesitant and often mispronounced, but English nonetheless.

The twenty-five-year-old ESOL program is not the only service provided by the Boston Chinatown Neighborhood Center. Many of the program's offerings take place in its run-down building on Oak Street, while others are held at the nearby Quincy School. The center offers a variety of programs as part of its adult education curriculum, including classes in citizenship, health, and computer literacy. The Oak Street building's condition is a source of concern for the staff. The ceiling of Lin's third floor classroom suffers from water damage, and the entire facility gives off a less-than-pleasant odor.

"We haven't fixed things because the building is supposed to be demolished at some point," says Huston, who, in her fourth week as ESOL director, looks worn-down and frazzled. Last weekend, in a bid to gain a modicum of control over the run-down facility, she painted her closet-size office. A small victory, but a symbolic one.

The building's fourth floor houses a computer lab, where recent immigrants can learn about e-mail, word processing and the Internet. Though forty-eight students were once enrolled in the center's computer literacy program, recent funding cuts by the Department of Education have slashed that number to twenty-four.

On Friday evenings, eight of those students gather around one of the center's instructors—a soft-spoken, serious thirty-year-old who immigrated to the U.S. from Vietnam fifteen years ago—for a lesson in how to use Microsoft Excel.

His students, who include at least one teenager and one senior citizen, display more enthusiasm than any instructor teaching the finer points of spread-sheet formatting really has a right to expect.

Though he brings none of Lin's dramatic flare to the classroom, the computer instructor more than equals his older colleague's serious approach to teaching. On one recent homework assignment, he asked his students to pretend their homes were for sale and design a poster using Microsoft Word that advertised its availability. He flipped through the assignments before a recent class. There were plenty of Bs and B+s, but no As. "None of them was perfect," he says simply.

The teacher puts on a veritable linguistic performance during class, teaching in three languages—English, Cantonese, and Mandarin—at once. His students, who include at least one teenager and one senior citizen, display more enthusiasm than any instructor teaching the finer points of spread-sheet formatting really has a right to expect. They seem to appreciate their teacher's effort.

"My sense is that it's popular because we've expanded classes to meet demand," the center's director, David Moy, says of the computer literacy cours-

es. "A lot of folks realize that computer literacy is something they need to know." Lin also uses the computer lab in his language classes, employing a software package called ELLIS, which is designed specifically for ESOL students.

The ESOL program, which takes just over three years to complete, offers 18 classes and serves 250 students. Ten years ago, the program's wait-list hovered near 1,000—ten times the number of students who can actually be served—but that figure is now down to 400 as a result of increased state funding for adult education. About 80 percent of ESOL students are female, and male students, many of whom work during the evening as waiters in restaurants, tend to cluster in the early afternoon classes, Moy explains.

The program's retention rate is about 80 percent. Some graduates use their newfound English proficiency to move up in the workforce, while others attend ESOL classes at community colleges. Still others return to the program to tutor immigrants on the wait-list for English language classes.

"That gives an opportunity for graduates to continue developing their skills," Moy says. It also helps the center accommodate immigrants while they wait for slots to open in the ESOL classes.

The program is well known within the Chinatown community, and this reputation explains at least in part why it attracts such a substantial number of immigrants. "They come within a couple of days of arriving in the country," Huston says, explaining that immigrants are referred to the center by family members and friends. "It's a very solidified, strong community and it networks right back to China and Hong Kong."

Huston, whose involvement with the program dates to 1993, says the demographics of the program's students have shifted during the past eight years. In the early 1990s, she explains, most students were middle-aged or older and worked in the garment industry or restaurants. Today, more students are younger and looking to pursue a variety of educational and economic options, she says. "They don't want to just get their English to the point where they can get a higher-level job," she says. "Some want to go to community college or pursue other vocational learning opportunities."

Moy and Huston are both quick to point to the largely bilingual curriculum, which distinguishes their program from other ESOL offerings. "What we've always built the program on was that we'd always help them address their immediate survival needs," Moy says, explaining that a bilingual approach allows the program to provide support services, rather than just teaching language skills. Only the third year of the program's three-year sequence is conducted exclusively in English.

While the bilingual method remains somewhat controversial among educators, Huston says it is necessary in part because Chinese is such a different language from English, with an entirely different grammatical structure that employs thousands of different characters. Using a monolingual curriculum in beginning classes would, she argues, be more difficult for her program than for one that served, say, Spanish-speaking students. And it is possible for the program to use a bilingual approach because almost all students speak Mandarin or Cantonese.

"Basically, we are teaching survival English," Lin says—which is why he feels so strongly that his students speak as much as possible. He has them practice speaking in a clothing store, in a bank, in an office. They converse in pairs, deliver monologues, and speak in unison.

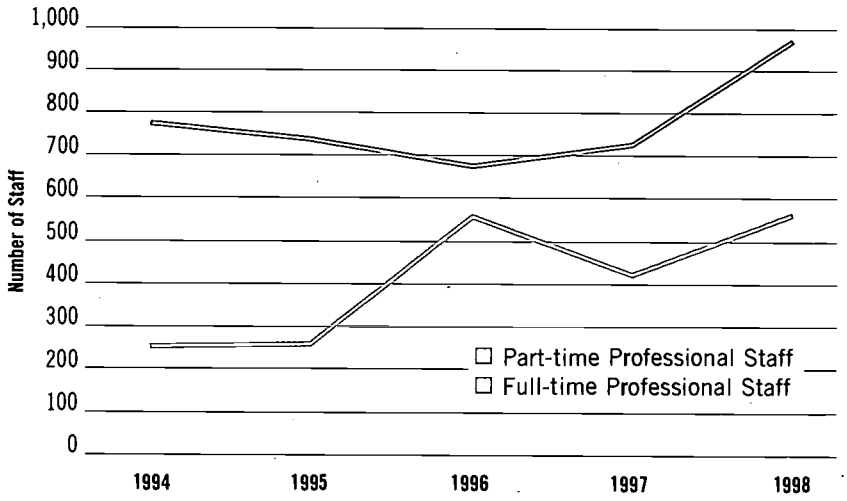
Two hours worth of chalk has accumulated on Lin's hands and pants. Class is almost over. He hands out a list of ten questions that employ variations on the grammatical construction "how many," and indicates to his class that they will recite them together.

"One, two, three," he chants, and, like that, Lin's students are speaking.

tors, teachers, and counselors, has more than doubled since 1994 (Figure 5.1). According to the Department of Education, there were 557 full-time professionals in 1998. This includes 146 full-time administrators, 287 full-time teachers, 43 full-time counselors, and 81 full-time paraprofessionals. Although the part-time professional staff has grown at a slower rate than has the full-time staff, there were still 978 part-time staff members in 1998. This includes 66 part-time administrators, 731 part-time teachers, 43 part-time counselors, and 138 part-time paraprofessionals. While the number of full-time and part-time teachers are both increasing, the fraction of full-time teachers is still small. Only about one-third of teachers are full-time.

FIGURE 5.1

Full-time Employment Levels of Adult Basic Education Professional and Paraprofessional Staff for Selected Fiscal Years



Salaries and Benefits of Teachers

The Department of Education's funding formula supports a salary rate for teachers of $14.54 per hour (Fiscal Year 1999), but it encourages local programs to use matching sources to increase pay beyond this level. It has been increasing this support regularly to try to make ABE teachers' salaries more competitive with comparable jobs, such as those of K-12 teachers. It also pays teachers for their time spent in preparation, follow-up, initial assessment, recruitment, progress assessment, translation, counseling, and staff development. Nonetheless, there remains great variation in pay and a considerable number of teachers are paid below this suggested pay level. Among lead teachers in Fiscal Year 1998, for instance, twenty-five percent of the teachers earned less than $14 per hour and only ten percent earned more than $21 per hour.[17] Moreover, only forty-eight percent of these teachers received any benefits.

Education and Turnover Rates of Lead Teachers

Adult basic education teachers are highly educated. In 1998, ninety-five percent of lead teachers had a four-year college degree, and forty-six percent had a graduate degree. In the present economy, the teachers who have a college degree can probably get better-paying jobs in the private sector or jobs with better career possibilities in the public school systems. Not surprisingly, then, there is a high turnover rate of adult basic education teachers. In fact, thirty percent have been with their program for less than a year, fifty-nine percent for less than two years, and seventy-three percent for less than three years. Program directors say that many people enter the system as teachers as a way to get experience before moving on to another more promising job.

Without a large number of full-time teachers who are stable, the ability of the adult basic education system to offer quality classes is quite limited. Studies have shown that full-time teachers are critical to program quality.[18] To improve quality, the Department of Education and the programs it funds will have to increase the number of teachers who are full-time (or at least committed to a long-term part-time career). Other studies have found that stability of teachers is also critical. To get stability, teachers must be paid at higher salary levels with benefits.

Concluding Thoughts

Through its ESOL and literacy classes, the ABE system is well-positioned to address the language and educational challenges that we identified in Chapter 2. There is, of course, room for improvement. For instance, classes should be convenient for students. While many students have indicated that classes on Saturday would be convenient for them, there are currently only 25 classes in the entire state. For instance, there is not a single Saturday ESOL class in the entire southeastern region of the state. The number of classes offered on Saturday should be increased, and programs should offer classes on Sunday to see if Sunday would also be convenient for students.

The ABE system is more limited in its ability to address the New Literacy Challenge. The most-advanced

17 We were able to compute salaries for 762 of the 868 teachers based on the information available.

18 Development Associates, "National Evaluation of Adult Education Programs," Fourth Report, Learner Outcomes and Program Results, U.S. Department of Education, December, 1994.

CASE STUDY #6

IEI BY NEIL MILLER

When Steve Landry became the director of manufacturing at International Electronics Inc. (IEI) in Canton two-and-a-half years ago, his main task was to reorganize the manufacturing process. IEI is a relatively small company that makes access-control software for opening the doors of buildings. The company's manufacturing employees had previously been organized into three groups: one group that built circuit boards, another that tested them, and a third group that packed them. Landry's mission was to replace the old system with teams or "cells" that would each have complete responsibility for a product from beginning to end. "The idea was to get more ownership and speed and flexibility," Landry says.

But when Landry brought in consultants to teach the employees to function as members of a team, he quickly discovered a major problem. Most of the manufacturing workers, many from places like Cape Verde, Vietnam, the Philippines, and Puerto Rico, aren't native speakers of English. Not only were they often unable to comprehend what was being said, they were also reluctant to ask questions. "They were too proud to say they didn't understand something," notes Landry.

The company decided that English-language training was essential or the desired changes would never happen. So IEI applied for and received a $16,000 grant from the Massachusetts Department of Education to pay a teacher for on-site ESOL instruction. Workers were asked if they would be willing to attend classes after hours. When most said no, IEI agreed to commit itself to holding class during work hours—four hours a week, or 10 percent of the workweek. In doing so, the company matched the state's $16,000 contribution in terms of hours lost. According to Landry, when overtime to replace the lost hours is factored in, IEI's investment is close to $24,000.

And so starting six months ago, "English class," as it is known, began at IEI for two hours each Monday and Wednesday mornings, with all fifteen of the non-English speakers in the manufacturing sector as students. Participation is not required but, according to Landry, everyone wanted to attend classes, and no one has dropped out so far. There are two separate sections—one for beginners and the other for more advanced students. The instructor is Pam Palmer, an ESOL teacher who also operates a Newton jewelry store.

Classes primarily focus on grammar and general English-language skills. As an added attraction, Palmer also teaches business terms. Now workers from Cape Verde or the Philippines are tossing around terms like "direct and indirect labor," "non-value-added," and "overhead," sometimes grasping more of these concepts than native speakers. "Someone recently told me I was overhead!" says Landry. But Landry is quick to emphasize that the major goal is general knowledge, not business lingo.

Although it "took a while to see payback," after twenty-six weeks of English class, Landry is pleased with the results so far. "They have developed self-confidence," he says. "They have grown as people."

Two students in the class have already been promoted, in part because of the class, with one becoming a team leader. Graduation took place in early June, with three members of the class as speakers.

Landry isn't the only person who is impressed by English class. Debby Baker, a team leader, says that her workers communicate better, can now read materials bills, and above all, have developed self confidence. "They have come out of their shells," she says. "Before, they wouldn't tell you if they didn't understand. They wouldn't ask questions. Now, if there is something they don't like, they tell you!"

Employees who speak English but lack reading and writing skills have benefited, as well. One Puerto Rican-born employee is constantly writing Baker notes about various problems, something that she never did before because of her embarrassment about her lack of English spelling ability. Another assembly-line worker, Amelia, who comes from Portugal and has been in the United States for twenty years, says her reading and writing are improving. "I have learned a lot," she says. "It is a worthwhile thing to do."

The company hasn't put a dollars-and-cents value on the classes, Landry concedes. But the newly organized teams are in place and working("No doubt about that," he says), and he attributes the team success in some measure to improved English skills.

Employees who are part of the classes are closer as a group because of the classes and the common language, he says, and they pull together when a team leader is out. With reading and writing skills as part of the instruction, employees are now doing required paperwork. One idea behind the team concept was worker self-sufficiency, and this is happening, he says. On-time product delivery—another major goal of the team idea—is now at 80 percent. "There is no doubt that service to the customer has improved," says Landry.

Meanwhile, the IEI itself is thriving, having just enjoyed the most profitable quarter in its history. It recently shipped $1 million in product in one month for the first time in its twenty-year history.

The company's $16,000 grant recently expired after 26 weeks, and IEI has applied to the Department of Education for a second grant. In the interim, classes continue. While waiting for DOE approval, the company is paying the teacher's salary, which had been funded by the original grant.

Will IEI lose some of these workers once they improve their English skills? Landry is unconcerned. "You need people to learn, to grow on the job," he says. "Sure, you'll lose some. But most will stay. They are learning something and getting paid for it."

As pleased as he is with the classes so far, Landry thinks it will take two-to-three years for the classes to have full effect. But after half a year, he already sees improvements. "People have really blossomed," he insists. "They are fantastic people, and it is working. It sure feels good when you see it."

ABE class prepares students to earn a high school credential. However, we have identified 667,000 workers who have a high school credential and who still need their skills upgraded. Rather than adding a new sequence of ABE classes, we suggest that the community colleges in partnership with employers address this challenge by expanding developmental education.

The geographical distribution of community colleges enables them to reach companies across the state, and they have an existing infrastructure that could be expanded. Because they are doing this type of work on a smaller scale, they already have some expertise in the area. Expanding developmental education through aggressive outreach offers the most promising way to address the New Literacy Challenge. We believe this should be done through a public-private partnership. The Legislature recently appropriated several million dollars to expand developmental education. These two new programs should provide a strong incentive for community colleges to expand their developmental education programs. To encourage companies and help share the cost, the state should establish a Basic Skills Training Tax Credit. Adopting this legislation would encourage companies to invest in their workforces and ultimately enhance the competitiveness of the Massachusetts economy.

Without a large number of full-time teachers who offer stability through a long-term commitment, the ability of the adult basic education system to offer quality classes is quite limited. Studies have shown that full-time teachers are critical to program quality. For teachers to perform their jobs well, they need training and experience, both of which typically come through a commitment to a long-term career in adult basic education. In order to encourage such a commitment, stable employment, good pay, and benefits must be offered. Unfortunately, the current conditions for teachers of adult basic education do not bode well for a long-term commitment to the profession.

CHAPTER 6 IS ADULT BASIC EDUCATION WORTH THE INVESTMENT?

THE ADULT BASIC EDUCATION SYSTEM educates a tiny fraction of the adults who need stronger skills. Before increasing the system's capacity, we should ask what return we get from an investment in ABE. Specifically, the question that must be answered is this: Does participation in adult basic education programs lead to positive outcomes? For the first time in the history of ABE in Massachusetts, because of recent improvements in data collection, we are able to conduct a comprehensive quantitative analysis of whether the money the state spends makes a difference in our ability to teach basic skills to adults. In an in-depth analysis of 1998 Department of Education data, we test for the effectiveness of ABE programs in a number of ways. We examine the learning gains of participants and then look at the learning gains in relation to the number of hours of instruction. We next estimate the probability that participants in ABE programs will earn a high school credential or find a job. We end by considering the broader range of outcomes that students achieve. Participation does lead to positive outcomes in all of these categories, but there is considerable room for improvement, and the state should focus on increasing the effectiveness of adult basic education. In addition, we have some concerns about the quality and limitations of the data available and offer suggestions for improvement.

Review of the Effectiveness of Adult Basic Education Nationally

Measuring the effectiveness of adult basic education is difficult, and unfortunately, there is no large body of reliable information on the topic. This section, which draws heavily on the work of Rutgers University Professor Hal Beder, offers an overview of what we know about the effectiveness of adult literacy education.[1]

Hal Beder investigated the outcomes and impacts of adult literacy education by analyzing 115 studies since the late 1960s. Beder selected twenty-three studies—which include national studies and studies of specific adult literacy programs across the country—as the most credible. From these case studies, he draws general conclusions about the effectiveness of adult literacy programs.

Beder examines a range of possible outcomes and finds that participants in adult literacy programs experience positive gains, although sometimes the gains are quite small, and his findings are far from conclusive. In terms of employment, he finds that these students in programs are more likely to find jobs. However, most of the studies reporting employment gains were based on self-reports and lacked comparison or control groups. Thus, we cannot infer whether these gains were caused by participation in adult literacy programs, by macroeconomic factors, or by other factors. Beder does find that, of the six studies that measured impact on earnings, five reported that participation in adult literacy programs led to increased earnings. In a separate study on workplace education programs, Kevin Hollenbeck finds a wage gain of 19 percent for male participants using one national data set and a wage gain of 14 percent for female participants using another national data set.[2] Participants believed that their jobs improved over time, although there is insufficient evidence to conclude that their participation in adult basic education contributed to that improvement.

The overwhelming majority of studies that asked participants whether they had improved their reading, writing, and math skills found that students perceive gains in these subjects. When measured by tests, however, the gains, were ambiguous, which raised a host of questions about test validity, attrition between pre-program and post-program testing, and other measurement issues. The studies did find that students at the more advanced levels are likely to obtain a GED.

Eleven studies measured the impact of adults' participation on the education of their children—asking whether a parent's increased skills had an effect on

1 Hal Beder, "The Outcomes and Impacts of Adult Literacy Education in the United States" (The National Center for the Study of Adult Learning and Literacy (NCSALL) Report 6, Harvard Graduate School of Education, Cambridge: January 1999). See also Mary Moore and Michael Stavrianos, "Review of Adult Education Programs and Their Effectiveness: A Background Paper for Reauthorization of the Adult Education Act" (Washington, D.C.: Mathematica Policy Research, Inc., August 1995).

2 Kevin Hollenbeck, "A Framework for Assessing the Economic Benefits and Costs of Workplace Literacy Training" (Kalamazoo, Mich.: W.E. Upjohn Institute for Employment Research, 1996).

his children. Eight found that participation in adult literacy had positive effects, two studies were inconclusive, and one study found negative effects. For the individual adult, participation appears to have a positive impact on participants' self-image, and these gains are quite large.

Beder analyzes twenty-three of the most credible studies. Yet he still finds flaws that raise some questions about the validity and utility of the findings in all of them. Clearly, the quality and volume of information must improve in order to assess fully the effectiveness of adult literacy programs.[3] Nonetheless, if we put the findings of all the studies together, they suggest that adult basic education has a positive impact on its participants. This is an appropriate prelude to the following discussion about the effectiveness of adult basic education in Massachusetts and the problems with data collection here in the Commonwealth.

In-Depth Analysis of 1998 Massachusetts Data

To assess the effectiveness of adult basic education in the Commonwealth, we set out to answer a simple but crucial question: Does participation in ABE programs lead to positive outcomes? Using 1998 Department of Education data, we looked at this question in four different ways. We examined:

1) learning gains
2) number of hours of instruction
3) probability of earning a GED or alternative high school credential
4) probability of finding a job

We analyzed the Fiscal Year 1998 data for approximately 19,800 participants in adult basic education programs across the Commonwealth.[4] Because of the way data are collected, these learning gains are only the reported gains that took place during the fiscal year from July 1, 1997 to June 30, 1998. This limitation means that we know nothing about gains that students achieved after this date. It is reasonable to assume that there were gains after the end of the fiscal year, since the endpoint is arbitrary from the perspective of the student, but we currently have no way of measuring those gains. Thus, we believe that if the learning gains were measured over a longer period of time, they would be greater. According to Robert Bickerton, the director of adult basic education for Massachusetts, when SMARTT, the Department's database, is fully implemented within the next few years, longitudinal data will be available, and we will then be able to assess a participant's learning gains over time.

Measuring the impact of services is critical if we hope to hold the adult basic education system accountable and determine the value of the state's investment. The type and quality of data collected are crucial to analyzing the impact of services. While the Department has improved the quantity and quality of data, more work remains to be done, and further improvement of data quality is among the most important recommendations of this report.

Learning Gains

Students attend classes to learn. Do they learn? When students enter adult basic education programs, they are tested or assessed in other ways to determine their starting level; they are also tested when they leave a class or at the end of the fiscal year. By comparing the entry and exit levels for all students within a fiscal year, we can gain an overall sense of the effect of participation in programs. Table 6.1 shows the percentage of ABE students at each grade level when they enter the programs and then the levels for the same group of students when they exit the program.[5]

TABLE 6.1

The Level of ABE Students upon Entry to and Exit from a Program*

Grade Level	Percent of Students at Level on Entry or Beginning of Fiscal Year**	Percent of Students at Level on Exit or End of Fiscal Year**
0	1.7	0.6
1	2.6	1.2
2	3.3	1.9
3	5.7	4.1
4	7.8	5.6
5	9.9	8.1
6	12.5	9.3
7	9.4	9.0
8	11.0	11.1
9	14.1	11.8
10	11.2	12.8
11	5.3	8.5
12	5.6	16.0

** ABE includes basic literacy, Pre-ASE, and ASE/GED.*
***n = 9,572*

The students who come to the door of ABE pro-

3 For a further discussion of measurement difficulties, see also United States General Accounting Office, "Adult Education: Measuring Program Results Has Been Challenging," GAO/HEHS-95-153, September, 1995.

4 The System for Managing Accountability and Results Through Technology (SMARTT) has provided the first opportunity in the history of ABE in Massachusetts to conduct a quantitative analysis of participant outcomes. While the quality of the Fiscal Year 1998 student, teacher, classroom, and site data is not yet optimal, due to a series of system design and data entry issues, the data contain a sufficient number of valid cases for the analysis of outcomes. A comparison of our sample with the sample used by the Mass. Department of Education in its federal statistical reports indicates that the students in our sample did not differ in any significant respects, and the minor differences we found did not alter the main findings of the analysis of this chapter.

5 ABE consists of Basic Literacy, Pre-ASE (Adult Secondary Education), and ASE/GED classes. These classes are for native English speakers or for immigrants who are fluent in English. Basic Literacy is a beginning literacy class. Pre-ASE is an intermediate class. ASE (Adult Secondary Education) is the most advanced class, and it prepares the student to take the GED test. ESOL classes teach English to speakers of other languages.

grams clearly need help upgrading their skills. About three-quarters begin their studies at or below the ninth grade level. Almost a third entered at the fifth grade level or below. Is the system able to help them learn? It appears so. While a small number of students decreased one or more levels and others stayed at the same level (see Table 6.4), in the aggregate, there appears to be an upward movement. By the time the students exit the programs—either because they achieved their goal, they dropped out of the class, or the fiscal year ended—there are fewer students at the lower and intermediate levels and more at the advanced levels. The number below the fifth grade level dropped by 10 percentage points, and the number of students at the highest level almost tripled from 5.6 percent to 16 percent. At the end of 1998, the average grade-level equivalent forABE students was 8.1.

Table 6.2 shows the same information, measured by student performance levels (SPL), for students enrolled in ESOL classes in 1998.

ESOL students also enter the system in need of instruction. More than half enter at a beginning level (SPL 0-4), and more than 90 percent enter at a beginning or intermediate level (SPL 5-6). At the time of exit, there has been an upward movement. The number of students at the beginning level dropped 15 percentage points to 54.6 percent. The number of students at the lowest level dropped 10 percentage points. At the other end of the spectrum, the number of students at the advanced level (SPL 7-10) doubled from 8.2 percent to 16.4 percent, but the number of students at the highest levels is still relatively small. This seems to suggest that students reach a plateau in their learning, or they leave the classroom before reaching advanced levels. Perhaps some students leave, because they have met their goals. At the end of 1998, the average student performance level for ESOL students was 4.1.

The learning gains that students achieve vary, depending on the level and type of class they attend.[6] Within ESOL, the smallest gains were in Advanced ESOL classes, where the average gain was .48 SPL level. The largest gains were 1.38 SPL levels in Beginning ESOL classes. The same pattern is true in ABE classes. The largest gains in ABE programs were in the beginning adult literacy classes, where the average gain was 1.52 grade level and the smallest gains were in GED at .58 grade levels (Table 6.3). Students who enter at lower levels achieve greater learning gains than students who enter with stronger skills.

Most students achieve learning gains (Table 6.4). In a short period of time, 11,755 students learned enough to advance a grade or SPL level. Indeed, 56 percent of students in ABE programs gained at least one grade level, and 63 percent of students in ESOL classes gained at least one SPL level. Approximately 30 percent of ABE students gained at least two grade levels and a comparable proportion of ESOL students gained at least two SPLs. Within one year, almost 3,000 students achieved learning gains of three or more levels.

TABLE 6.2

The Level of ESOL Students Upon Entry To and Exit From a Program

Student Performance Level	Percent of Students at Level on Entry or Begining of Fiscal Year*	Percent of Students at Level on Exit or End of Fiscal Year*
0	13.1	3.2
1	19.4	10.2
2	14.5	13.1
3	13.2	14.8
4	9.8	13.3
5	15.4	15.2
6	6.4	13.8
7	5.5	9.3
8	2.0	4.1
9	0.3	1.6
10	0.4	1.4

** n = 10,132*

TABLE 6.3

Average Learning Gains for ABE Students and for ESOL Students [7]

Program/Service Type	N	Average Learning Gain*
Adult Literacy (Beginning ABE)	2,965	1.52
Pre-ASE (Intermediate ABE)	3,142	1.21
ASE/GED	3,465	0.58
Beginning ESOL	7,096	1.38
Intermediate ESOL	2,208	0.68
Advanced ESOL	828	0.48

* Learning gains in literacy classes are measured in grade levels. Learning gains in ESOL classes are measured in student performance levels.

6 When tested, the gains in all categories were statistically significant. Large standard deviations, however, suggest that there was great variation in individual gains.

7 Students were classified using the level that they were assessed at upon entry, not based on the level of class that they attended. Classification based on first class attended may not accurately represent the students' levels, because students often attend classes that have space available even if they are more or less advanced than the student's level. For instance, beginning ESOL students may be placed in an intermediate class because no beginning class is available. Individuals interested in additional statistics can request these from the authors.

TABLE 6.4

Number and Percentage of Students who Achieve Learning Gains

Program Type	Number of Students who Achieved Outcome	Percent of Students who Achieved Outcome
ABE/PRE-ASE/GED		
Decreased a Level	409	4.3
Stayed the Same	3,817	39.9
Increased One Level	2,493	26.0
Increased Two Levels	1,433	15.0
Increased Three or More Levels	1,420	14.8
Total	9,572	100.0
ESOL		
Decreased a Level	223	2.2
Stayed the Same	3,516	34.7
Increased One Level	3,283	32.4
Increased Two Levels	1,621	16.0
Increased Three or More Levels	1,489	14.7
Total	10,132	100.0

Hours of Instruction

We ultimately want to know whether adult basic education makes a difference for those adults who participate in it. The number of hours of instruction participants receive seems a sensible indicator of a program's quality, since we can infer that students are likely to stay longer in programs that meet their needs and spend less time in those that don't. Hours of instruction is also a good measure because the data can be reliably obtained for almost all students.

TABLE 6.5

Hours of Instruction by Service Category and Service Type

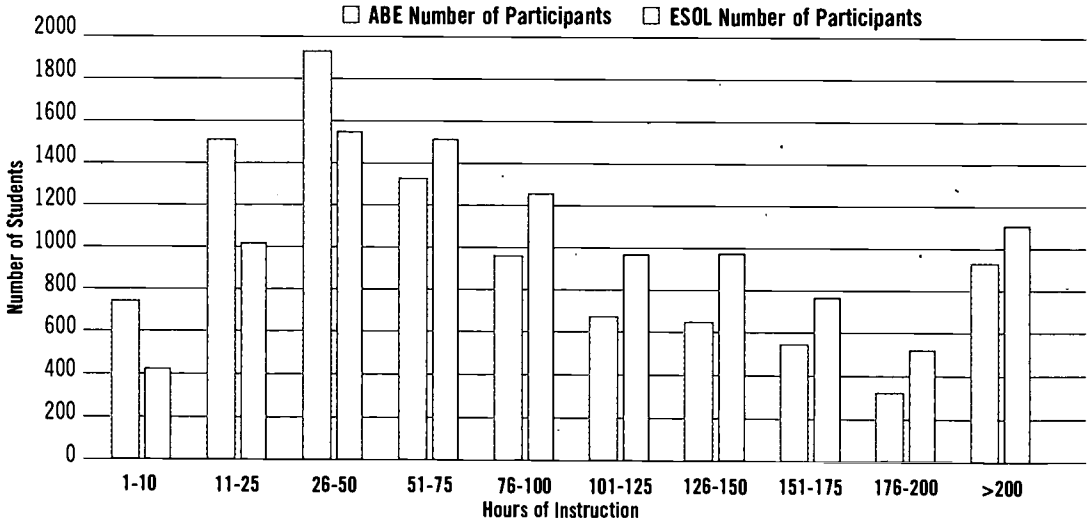
Type of Class	Hours of Instruction[8]	
	MEAN	MEDIAN
Adult Literacy	95	68
Pre-ASE	77	51
ASE/GED	71	50
Beginning ESOL	101	84
Intermediate ESOL	93	74
Advanced ESOL	91	72
TOTAL	97	74

The average number of hours of instruction in our sample is 97 hours (Table 6.5). Compared to earlier years, this number is increasing. In the most recent year, 1999, the average increased to about 107 hours. The median, which is the point at which 50 percent of the participants are below and 50 percent are above, is often a better indicator than the mean which can be greatly influenced by a small number of students. Looking at the median for beginning ESOL students, for instance, we see that half of the students stayed for 84 hours or more of instruction, and half received less than 84 hours of instruction. The median hours for all students is 74 hours.

Overall, students in the Commonwealth receive more hours of instruction than their counterparts across the country (Table 6.6). The median hours of instruction for adult literacy, pre-ASE and ASE students in Massachusetts is well above the median in other regions of the country. ESOL students in the West receive significantly more hours of instruction

FIGURE 6.1

Distribution of Hours for ABE and ESOL Students



8 This is based on 19,800 students, which is an unduplicated count of students and includes all students who received at least an hour of instruction. This average is slightly different from MDOE estimates because our sample includes all students with at least 1 hour of instruction but it does not include data from students tutored by volunteers managed by Literacy Volunteers of Massachusetts. This is in contrast to federal guidelines that only count students who have received 12 hours of instruction. About 8 percent of ABE students and 4 percent of ESOL students attend more than 1 hour but less than 12 hours of instruction.

TABLE 6.6

Median Hours of Instruction by Program Type, Massachusetts Compared to Other Regions of the United States*

Region	Basic Literacy/ Pre-ASE Hours	GED Hours	ESOL Hours	Overall Hours
North Central	25	34	57	34
Northeast	58	33	77	50
South	30	24	62	30
West	36	25	136	107
Total U.S.	35	28	113	58
Massachusetts	61	50	84	74

Source: MDOE 1998 data and 1994 National Evaluation of Adult Education Programs

** This table compares 1998 Massachusetts data with 1994 national data. To our knowledge, no comparable 1998 national data were available.*

than students in any other region of the country. Massachusetts is a leader in providing students with more hours of instruction in adult literacy, but the Commonwealth could do better for ESOL students.

The average number of hours conceals the fact that a large number of students attend classes for a small number of hours, and a small number of students attend classes for many hours. Figure 6.1 describes the distribution of hours for ABE and ESOL students in Massachusetts. ESOL students receive more hours of instruction than ABE students, with 23.6 percent of ESOL participants receiving more than 150 hours of instruction compared to 18.6 percent of ABE participants. At the other end of the spectrum, almost one in five students drop out after about a month—approximately 25 hours of instruction. The number of students that the system reaches is limited to a very small number, especially compared to the number of people potentially in need of instruction. Yet, 3,780 (19 percent) of the students drop out after a month. A seat in a class is a valuable and scarce resource. Programs and the Department of Education should do a better of job of finding out why students leave and figuring out how to keep students in that seat so they can achieve learning gains.

If the number of hours of instruction makes a difference in terms of a student's learning gains, we should be able to see greater learning gains for students who receive more hours of instruction. Tables 6.7 and 6.8 describe the percentage of ABE and ESOL students who achieved an increase in grade or SPL level by the number of hours of instruction received and the average learning gains for different lengths of instruction.

As students receive more hours of instruction, they are more likely to achieve learning gains, and the average learning gains increase. Of all the ABE students who received 1 to 10 hours of instruction, 29.0 percent had a learning gain of one or more levels, and 13.6 percent achieved a gain of two or more levels. The average gain for those students who attended 1 to 10 hours was .42 of a grade level. (The average learning gains after just 10 hours of ABE instruction and also after 10 hours of ESOL instruction may appear high, but these early gains reflect recall of material that has already been learned, and this finding is consistent with other research.) In contrast, 75 percent of ABE students who received 151 to 175 hours of instruction achieved a gain of one grade or more. More hours of

TABLE 6.7

Learning Gains by Hours of Instruction for ABE Students

Hours of Instruction	% of Students who Achieved an Increase of 1 level or more	% of Students who Achieved an Increase of 2 levels or more	Average Learning Gains
1-10	29.0	13.6	.42
11-25	40.5	19.4	.68
26-50	46.4	23.4	.89
51-75	55.9	26.9	1.02
76-100	64.2	31.6	1.20
101-125	66.3	35.6	1.34
126-150	71.9	38.3	1.39
151-175	75.0	43.8	1.53
176-200	74.0	47.3	1.59
> 200	77.3	51.2	1.75
Total	55.9 %	29.8 %	1.08

TABLE 6.8

Learning Gains by Hours of Instruction for ESOL Students

Hours of Instruction	% of Students who Achieved an Increase of 1 level or more	% of Students who Achieved an Increase of 2 levels or more	Average Learning Gains
1-10	34.7	12.7	.47
11-25	42.8	17.7	.69
26-50	51.3	20.9	.83
51-75	60.3	26.2	1.00
76-100	68.1	27.9	1.13
101-125	67.8	32.3	1.18
126-150	70.9	38.8	1.41
151-175	76.9	39.8	1.50
176-200	79.9	46.2	1.74
> 200	80.9	50.7	1.77
Total	63.1%	30.7%	1.16

instruction means more learning.

For ABE and ESOL students, the data are clear and consistent. If all students were to receive at least 150 hours of instruction, about three-quarters of them should achieve a learning gain of at least one level. The policy prescription that follows is straightforward: We must get students into the classroom and then make sure they stay there for more hours.[9]

Probability that High School Dropouts Will Earn a High School Credential

In Chapter 2, we argued that people who do not have a high school credential do not have the education needed for the New Economy. One of the goals of the adult basic education system is to help students earn a high school credential. Does the system work? We present three models to answer this question. We look at:

1) the effect of hours of instruction only
2) the effect of hours controlling for (holding constant) student background characteristics
3) the effect of hours controlling for (holding constant) student background characteristics and site characteristics.[10]

The question is important in terms of the overall purpose of adult basic education. Earning a high school credential is the final step in the ABE system, and a high school credential opens many doors. With a high school credential, the recipient can progress to further education and training. Even without further education, the person's labor market prospects are likely to improve and his or her earnings can be expected to be higher. While we are confident of the accuracy of these data, they are limited in the sense that we only know if a student acquires a credential if he or she gets it during the fiscal year that the student took the ABE class and reports it to his or her teacher. Thus, the findings are likely to underestimate the effects of participation. We chose only to include students in our analysis whose entering abilities were greater than or equal to the sixth grade, since pre-ASE and ASE/GED students are the ones for whom attainment of a high school credential is a goal. For participants with lower entering abilities, attainment of a high school credential may be a long-term goal but is not a realistic short-term goal. The decision to include participants whose entering ability was equal to or greater than the sixth grade (pre-ASE level) also makes our analysis conservative. If we had only included students in the most advanced class (ASE/GED), the probabilities reported would be higher.[11]

Key Findings[12]

The key findings of the analysis are:

- Participants who receive more hours of instruction are more likely to earn a high school credential than participants who receive fewer hours of instruction. This relationship depends on the participants' age, race and ethnicity, entering ability, and whether the participants receive some form of public assistance.
- More hours of instruction seem to offset the effect of specific background characteristics, such as age, entering ability, and receipt of public assistance, that make it less likely that the participant will earn a high school credential. The analysis suggests that these attainment gaps are narrower at higher numbers of instructional hours than at lower numbers of instructional hours.
- In addition to hours of instruction and participant background, site characteristics help explain attainment. Large differences exist between instructional sites. Some sites appear to have a positive influence on whether participants will attain a high school credential. Others have a negative or insignificant effect. At this time, we cannot say exactly what characteristics of a site influence student attainment. We believe the differences might be explained by the number of hours in class per week, teacher quality and stability, or possibly other student, classroom, teacher, or program characteristics.
- Participants in Pre-ASE and ASE programs who attend more intensive classes (i.e., classes that meet for more hours per week) are more likely to earn a high school credential than participants who attend classes that meet for fewer hours per week, controlling for hours of instruction received and participant background characteristics.[13]

What is the Relationship between Earning a High School Credential and Hours of Instruction?

We first examine the effect of hours of instruction, not controlling for individual background and site characteristics. Participants who receive more hours of instruction are more likely than participants with fewer hours of instruction to earn a high school credential. For instance, in the sample that includes pre-ASE and ASE students, the probability is 0.14 after 25 hours of

9 It is important to keep in mind that these are descriptive data. They are not based on an analytic model that tries to predict achievement but instead assume the key difference between participants is the number of hours of instruction they received. Student and program characteristics that may affect gains are not considered here. We initially intended to fit a series of models to predict achievement by looking at the effect of hours of instruction while controlling for student background and site characteristics. Based on our exploratory analysis and discussions with MDOE staff about the quality of data, we did not complete this portion of the analysis. We recommend that future research use the improved data from 1999 and beyond to implement this research.

10 Our sample consisted of 6,622 adults who participated in Pre-ASE and ASE programs less 61 cases that were rejected because of missing data. Fifty-six percent of participants in this sample were women. The average age was 28.8 years. Average years of schooling equaled 8.2 years. Slightly over 20 percent were immigrants. 55 percent were white, 21 percent black, 20 percent Hispanic, and the remaining 4 percent were American Indian or Asian. 21 percent received some form of public assistance. 40 percent worked. 29 percent were unemployed and looking for a job, and 25 percent were unemployed and not looking for work. The remainder was either retired persons or homemakers. Most participants spoke English as their first language (72 percent). 16 percent spoke Spanish as their first language.

11 We conducted an analysis that supports this statement.

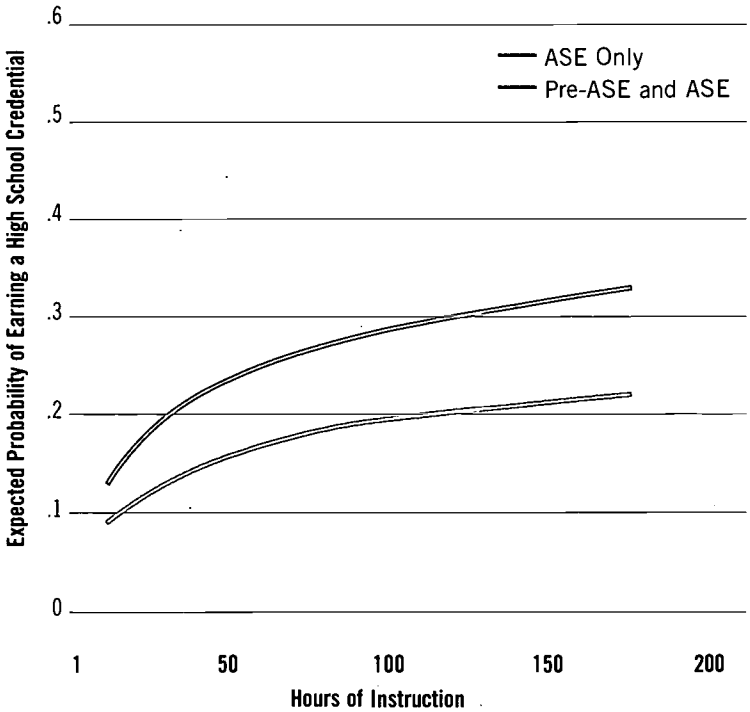
12 These findings do not establish evidence of a causal relationship between hours of instruction and attainment of a high school credential, nor do they support the notion that achievement of high school dropouts in Pre-ASE and ASE programs is fully understood.

13 This is consistent with a pilot program in the U.K. The Basic Skills Agency, which manages adult education in the U.K., has been piloting nine intensive basic skills programs. Though an independent evaluation is not yet complete, feedback so far is very positive.

14 See Table C.1 in Appendix C for the parameter estimates, approximate p-values, and goodness-of-fit statistics for this model.

FIGURE 6.2

Fitted Probabilities that Participants in Pre-ASE and ASE and Participants in ASE Programs Only Will Earn a High School Credential, as a Function of Hours of Instruction



instruction compared to 0.19 at 100 hours of instruction and 0.22 after 225 hours of instruction (Figure 6.2).[14] While the differences in the probabilities are statistically significant, the differences in probabilities are small. If we include only ASE students, the likelihood of earning a high school credential increases and the differences are greater at more hours of instruction.

What is the Relationship between Earning a High School Credential and Hours of Instruction, Controlling for Student Background Characteristics?

We next look at the effect of hours of instruction while controlling for (holding constant) several background characteristics.[15] Here we look at the effects of different influences on a student's probability of earning a high school credential. We look at whether a specific background characteristic impacts the probability of earning a high school credential.[16]

The key finding to be gleaned from this model is that, in addition to hours of instruction, participant background predicts attainment. However, our ability to draw inferences about the size of the effect of specific background characteristics is limited by the available data, specifically imperfect measures of socioeconomic status and other background characteristics. Nonetheless, we conclude that whether participants will earn a high school credential depends on who they are in addition to the effort they put forth. We show how the students' background characteristics influence the expected probabilities in the following three examples. We consider: 1) the effects of a person's race or ethnicity and employment status; 2) the effects of a person's age; and 3) the effects of a person's entering ability. In each case, we hold constant all other variables.

Race and Employment Status

We first look at the direct effect of race and employment status on the likelihood of a student earning a high school credential, holding constant other background characteristics.[17] The key findings include:

- The results suggest that race and ethnicity are related to attainment, but future research is needed to understand fully the effect of race. Our analysis is limited by not having direct measures of a person's socioeconomic status (e.g. income). Future work could determine the extent of the influence of race by including direct measures of socioeconomic status instead of the indirect measures of employment and public assistance status. This will show which portion of the variation in attainment can be attributed to race or to other background characteristics.
- Based on our current analysis, it is nevertheless true that white students are more likely to earn a high school credential than Hispanic or black students, irrespective of whether students are employed or unemployed and looking for work.
- The probability of receiving a high school credential for participants in all racial groups is greater for those who work than it is for those who are unemployed and looking for work—again controlling for all other background characteristics. For instance, after 100 hours of instruction, the predicted probability for black employed participants is 0.18 and it is 0.13 for unemployed black participants.

An attainment gap between whites and blacks and Hispanics is consistent with the race-based achievement gap, as measured by differences in test scores, that has been documented in K-12 education. Before we can conclude that the ABE system produces different outcomes for different racial and ethnic groups, further research is needed to disentangle the effects of race, income, and other possible factors currently not included in the analysis. It may be, for instance, that some of the race effect reflects differ-

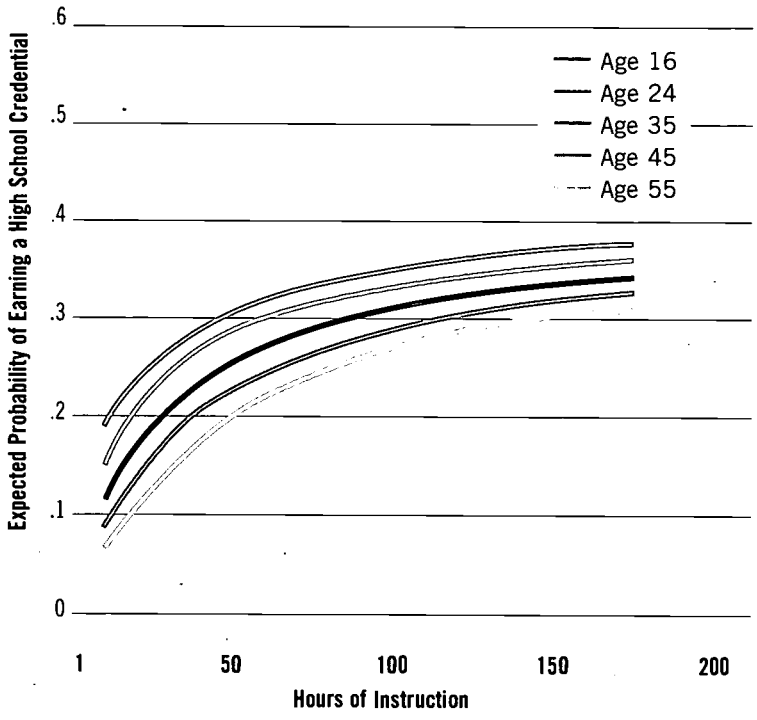
15 Full regression results are presented in Table C.1 in Appendix C which includes the parameter estimates, approximate p-values, and goodness-of-fit statistics for this background model describing the probability that high school dropouts will earn a high school credential as a function of hours of instruction, controlling for age, race/ethnicity, socioeconomic status, entering ability, first language, and interactions between hours of instruction and student background characteristics.

16 We fitted a series of models including age, race, gender, prior education, entering ability, first language, employment status, and public assistance status. We tested for two-way interactions between hours of instruction and these background characteristics. We retained only those main effect and interaction terms that were significant. As a result, gender and prior education were removed from the model. In addition to the significant effects we highlight (i.e., race/ethnicity, employment, age, and entering ability), we also found that homemakers are more likely than employed, unemployed, and retired participants to earn a high school credential. Furthermore, participants who spoke Portuguese were less likely and participants who spoke Cambodian were more likely to earn this credential. The effect of public assistance status depended on hours of instruction received. Individuals interested in a full taxonomy of nested models can request regression output from the authors.

17 To demonstrate the effect of race and ethnicity, we controlled for other background characteristics, including age, first language, entering ability, and whether participants received public assistance.

FIGURE 6.3

Fitted Probabilities that White Employed Pre-ASE and ASE Participants of Different Ages Will Earn a High School Credential as a Function of Hours of Instruction, Controlling for Other Background Characteristics



ences in incomes for which we did not have a direct measure. Or, it may be that the influence of race is related to other student, teacher, or program characteristics not included in the model.

There are competing theories about the cause of the gap. It appears to be a result of a complicated mix of expectations for students, parenting practices, and perhaps, cultural differences.[18] It might also reflect differences in the quality of schooling received. From the perspective of the adult basic education system, we care about the effect of hours of instruction on the likelihood of obtaining a high school credential. We care if participation in adult basic education affects the existing gap, and in fact, the goal should be to narrow the gap through hours of instruction. We find that hours of instruction make a positive difference for all students by increasing the probability that all students will earn a high school credential.

18 For a detailed discussion of the gap, see Christopher Jencks and Meredith Phillips, eds., *The Black-White Test Score Gap* (Washington, D.C.: Brookings Institution Press, 1998).

19 We tested whether the model would differ if we included prior years of schooling instead of entering ability. An important difference is that the effect of years of schooling does not vary depending on hours of instruction, unlike the differing effect in the models with entering ability (i.e., there is no two-way interaction). Individuals interested in this model can request regression output from the authors.

Age

We next looked at the effect of a person's age, while controlling for all other background characteristics. We found that the influence of age depends on hours of instruction and vice versa. Older people are less likely to attain a high school credential, but as they attend classes for more hours, the difference between older and younger students almost disappears (Figure 6.3). It makes sense that it is harder for older students to earn a high school credential. They have been out of school longer, and more time has elapsed since they originally learned the material in school. They face the task of relearning the material, whereas younger students are more likely to be able to recall the material from their days in school. Since the differences shrink as students receive more hours of instruction, the adult basic education system can make a positive difference for older students if they stay in class long enough.

As this figure suggests, it is noteworthy that:

- At all ages, the predicted probability of earning a high school credential is greater at higher levels of participation.
- At all hours of instruction, the probability of earning a high school credential is lower as age increases.
- At higher levels of participation, the discrepancies between different age groups have decreased and almost disappear, suggesting that duration of instruction mediates the effect of age.

Entering Ability

Finally, we looked at the effect of entering ability, while controlling for all other background characteristics.[19] Hours of instruction and a student's entering ability matter (Table 6.9, Figure 6.4). The expected probability of receiving a high school credential is lower at low levels of entering ability and higher at high levels of ability, suggesting that the skills and experiences that participants bring to their classes matter. Our model predicts that a student who enters at the eleventh grade level and receives only 25 hours of instruction is more than twice as likely to get a high school credential than a student who enters at the seventh grade level and receives 225 hours of instruction. It is noteworthy that at any level of entering ability, the expected probability of receiving a high school credential is higher when participants receive more instructional hours.

FIGURE 6.4

Fitted Probabilities that White Employed Pre-ASE and ASE Participants of Different Levels of Entering Ability Will Earn a High School Credential as a Function of Hours of Instruction, Controlling for Other Background Characteristics

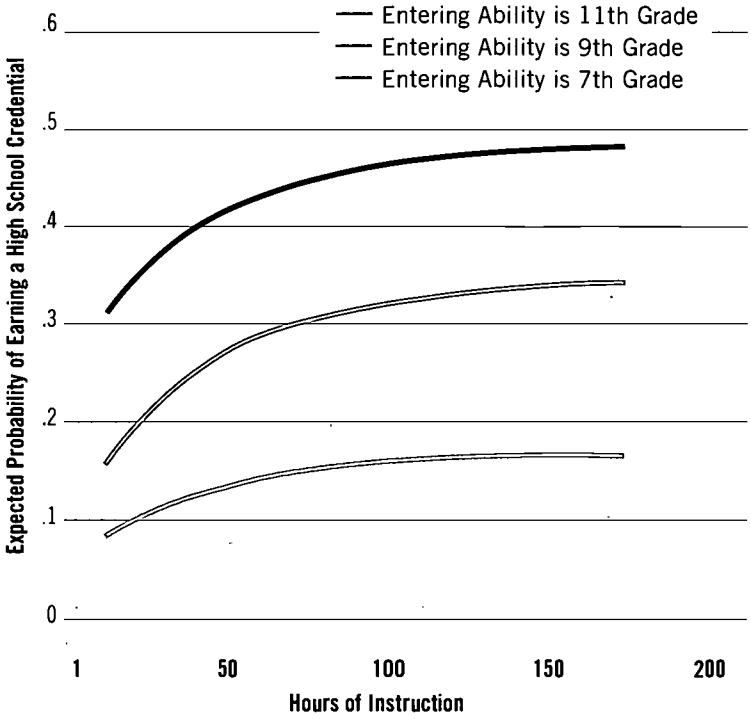


TABLE 6.9

Expected Probabilities that White Employed High School Dropouts Will Receive a High School Credential as a Function of Hours of Instruction and Selected Levels of Entering Ability[20]

Hours	GLE 7	GLE 9	GLE 11
25	0.13	0.23	0.40
50	0.14	0.27	0.43
75	0.15	0.30	0.45
100	0.16	0.32	0.46
125	0.16	0.34	0.47
150	0.17	0.35	0.48
175	0.17	0.36	0.49
200	0.18	0.37	0.50
225	0.18	0.38	0.50

What is the Relationship between Receipt of a High School Credential and Site Characteristics, Controlling for Hours of Instruction and Student Background Characteristics?

Finally, we consider whether the site of the program influences the likelihood of attaining a high school credential. We find that the site has a lot to do with student attainment.[21] We don't know for certain what the key factors are. Previous studies suggest that staff consistency and the number of full-time teachers are likely explanations. In a first attempt to understand the effect of site characteristics, we looked at intensity of instruction, as measured by the number of planned class hours per week. Intensity of instruction is important to consider because the findings can easily influence the program design in order to enable students to have the greatest learning gains in the most time- and cost-effective manner. Intensity of instruction, as measured by class hours per week, increases the probability that high school dropouts in Pre-ASE and ASE programs will receive a high school credential before the end of the (fiscal) year. Based on our findings, participants in Pre-ASE and ASE programs who attend more intensive classes (i.e. classes that meet for more hours per week) are more likely to earn a high school credential than participants who attend classes that meet for fewer hours per week, controlling for hours of instruction received and participant background characteristics (Table 6.10).

TABLE 6.10

Expected Probabilities that White Employed Pre-ASE and ASE Participants Will Earn a High School Credential as a Function of Intensity of Instruction, Controlling for Student Background Characteristics and Hours of Instruction[22]

Class Hours Per Week	Expected Probability of Earning a HS Credential After 48 Hours of Instruction
4	0.24
5	0.24
6	0.25
7	0.26
8	0.27
9	0.27
10	0.28
11	0.29
12	0.30
13	0.31
14	0.32

A short, intensive GED or pre-GED class seems more effective than a class that meets for a few hours a week over a long period of time. Our model predicts that students who receive 100 hours of instruction in classes that meet for 12 hours per week are as likely to earn a high school credential as students who receive

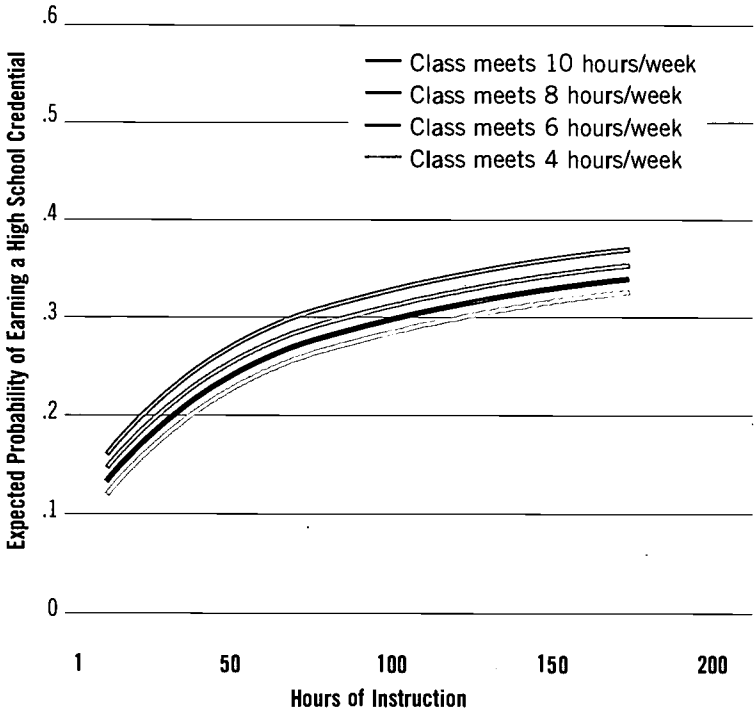
20 We control for age, public assistance status, first language, and two-way interactions between hours of instruction and student characteristics.

21 The relationship between several sites and arrainment is positive and significant but effect sizes range considerably. In addition, many site coefficients were either positive or negative but insignificant.

22 We set hours of instruction to the average of In hours or roughly equal to 48 hours of instruction. We used the average of age, entering ability, and first language. Since most participants were white and not on public assistance, we set public assistance and black, Hispanic, Asian, and American Indian to zero.

FIGURE 6.5

Fitted Probabilities that White Employed Pre-ASE and ASE Participants Will Earn a High School Credential as a Function of Hours of Instruction and Intensity (ie., planned class hours per week), Controlling for Other Background Characteristics



225 hours of instruction in classes that meet for 6 hours per week. It will take the second group of students more than twice as many hours of instruction to have the same likelihood of earning a high school credential (Table 6.11).[23] Figure 6.5 illustrates the effect of intensity of instruction. It shows how the probability of earning a high school credential is higher in more intensive classes than it is in less intensive classes. The figure also shows that within each class participants who receive more hours of instruction are more likely to earn a high school credential than participants who receive fewer hours of instruction.

Summary of the Probability of Earning a High School Credential

One of the final steps of the adult basic education system is to help students earn a high school credential. This step will help people who currently have limited options in the New Economy. Does participation in ABE programs affect the likelihood of earning a high school credential? Our analysis suggests that three factors matter: 1) hours of instruction; 2) students' background characteristics, some of which increase the likelihood of earning a high school credential and others of which decrease the likelihood; and 3) site of instruction.

Hours of instruction make a difference. A person's chances of earning a high school credential always improve with more hours of instruction. Our conclusion: We must focus our energies on getting students to come to class and to stay in class longer.

Given that sites differ in many ways, it is not surprising that some sites appear more effective than others in helping students succeed. It does not make sense that we haven't systematically tried to understand what does and does not work. This research is the first step in that process. Our findings are clear that intensive pre-GED and GED instruction is more effective than instruction over a longer period of time at fewer hours per week. The Department of Education should

TABLE 6.11

Expected Probabilities that White Employed Pre-ASE and ASE Participants Will Earn a High School Credential as a Function of Hours and Intensity of Instruction, Controlling for Additional Background Characteristics[24]

Hours of Instruction	Class Hours Per Week					
	4	6	8	10	12	14
25	0.20	0.21	0.23	0.24	0.26	0.28
50	0.24	0.25	0.27	0.29	0.30	0.33
75	0.26	0.28	0.30	0.31	0.33	0.36
100	0.28	0.30	0.31	0.33	0.35	0.38
125	0.29	0.31	0.33	0.35	0.37	0.39
150	0.31	0.32	0.34	0.36	0.38	0.41
175	0.32	0.34	0.35	0.37	0.39	0.42
200	0.33	0.34	0.36	0.38	0.40	0.43
225	0.33	0.35	0.37	0.39	0.41	0.44

23 We tested how accurate our model is by comparing what the model predicts to what actually happened. We find that our model fits the data well, and the differences between our predictions regarding who will earn a high school credential and who actually did earn a credential are small and statistically insignificant. Individuals interested in obtaining a full description of the fit of the model can request it from the authors.

24 We used the average of age, entering ability, and first language. Since most participants were white and not on public assistance, we set public assistance and black, Hispanic, Asian, and American Indian to zero. It is also important to note how these predictions correspond to the data. For instance, among white employed participants, only 10 percent attended classes for more than 177 hours. Furthermore, only about 10 percent of white employed participants attended classes that meet for 10 or more hours per week.

offer intensive pre-GED and GED courses, and it should also evaluate the effect of intensive instruction in other classes as well. This research looks only at the probability of earning a high school credential. It does not consider what test scores students are likely to get. Recent research suggests that a person's GED score influences future earnings, and those with higher GED scores are likely to earn more.[25] If the ABE system adds intensive pre-GED and GED courses, as we believe it should, it must also start monitoring the GED scores of its participants to determine if there is a difference in scores depending on the form of instruction students receive.

Labor Market Outcomes

The education that occurs in the classroom is only one step in helping people upgrade their skills and improve their lives. To assess the value of the state's investment in adult basic education programs, we must learn about what happens to students after they leave the classrooms so that we can answer questions such as: What happens one year later? What happens five years later? What happens ten years later? What happens to them in the labor market? Does participation in ABE increase their wages or improve the quality of jobs they hold?

Currently, little information is collected by providers and state agencies about what happens to students after they leave the programs. We were able to look at whether a participant found a job during the year that he or she participated in a program. About one-quarter of the participants were unemployed and looking for work when they entered the adult basic education system. Of the people looking for work, 18.2 percent or 893 people found a job during the fiscal year (Table 6.12). There were differences between the outcomes of ABE and ESOL students, with ESOL students almost twice as successful in their job search.

In order to determine whether the hours of instruction had an effect on a student's ability to find a job, we analyzed two subsamples of unemployed students —ABE and ESOL students—who were looking for work in 1998. We asked whether participation, as measured by hours of instruction, affected the probability that unemployed participants who were looking for work would find a job.[26]

Key Findings

Unemployed ABE Students

- Unemployed ABE students who receive more hours of instruction are more likely to find a job than participants with lower levels of participation.
- Of all the background characteristics in our analysis, only public assistance status impacted whether a student would find a job before the end of the fiscal year. Participants who receive public assistance are less likely to find a job than participants who do not receive any form of public assistance.
- Participants with greater learning gains are more likely to find a job than participants with smaller learning gains.

Unemployed ESOL Students

- For unemployed ESOL students, hours of instruction did not explain whether students found a job. Factors other than hours of instruction may explain who will find a job. One possible explanation is the availability of job placement services. Another is the extent to which the participant is connected to community resources that may assist her in finding a job. More research is needed to confirm or disprove these hypotheses.

A major shortcoming of the information available from the adult basic education system is that it is not connected to information collected by agencies that track labor market outcomes. Right now, we can

TABLE 6.12
Labor Market Goals and Outcomes of Participants

	All Participants		ABE Participants		ESOL Participants	
	Number	Percentage	Number	Percentage	Number	Percentage
Employed	9,145	46.2	3,756	39.1	5,389	52.8
Unemployed and Looking for Work	4,900	24.7	2,619	27.3	2,281	22.3
Found Job in Fiscal Year 1998*	893	18.2	332	12.7	561	24.6

** Percentage of the Unemployed and Looking for Work*

25 See John Tyler, Richard Murnane, and John Willett, "Do the Cognitive Skills of School Dropouts Matter in the Labor Market?" NCSALL Report, April, 2000.

26 Regression coefficients and goodness-of-fit statistics for the chosen model for the subsample of unemployed ABE participants are included in Appendix C. Output from the analysis of the subsample of unemployed ESOL participants can be obtained from the authors.

say that 893 participants found jobs, but we don't know anything about those jobs, such as whether they are dead-end or on career paths to more opportunities. We don't know anything about the wages the participants are earning.[27] We don't know what will happen in one year's time. We cannot answer these critical questions, in part, because the state currently does not require different workforce agencies to share information. This lack of knowledge is more the result of a lack of political will than any technical barriers. It would require collecting the social security numbers of participants and then requiring the Department of Revenue and other agencies that track labor market participation to share their data. This raises real privacy issues, and there must be provisions for people who do not want to provide this information or who do not have social security numbers. We believe that these issues can be addressed with proper safeguards, and the value of tracking participants justifies the need to collect this information. The Governor's office should exercise the leadership necessary to make this happen, and the mandate of the Department of Revenue must be changed.

27 In Hal Beder's review of evaluations of adult literacy programs, he found that participation is likely to result in increased earnings. See Hal Beder, "The Outcomes and Impacts of Adult Literacy Education in the United States."

28 This table only includes participants who received at least twelve hours of instruction, and so the numbers will be slightly different from other numbers presented in this chapter.

Range of Other Outcomes over Time

Thus far, we have focused on four indicators of program effectiveness: learning gains, hours of instruction, probability of attaining a high school credential, and the probability of finding a job. There are other types of outcomes that participants might achieve. In this section, we look at a broader range of outcomes and compare the results over the last three years. Table 6.13 summarizes these outcomes.[28]

The number of students who attained a GED has increased over the last three years to almost seven percent. The number and proportion of participants who entered an education or training program has also increased, although the numbers are still quite small. In 1999, only 557 students entered an education or training program after completing an ABE class.

As for societal outcomes, the proportion of participants who received United States citizenship appears to have decreased slightly, although the actual number has increased. The same is true for the number and proportion of participants who registered to vote or who voted for the first time. The absolute number is higher, but the proportion is slightly lower.

In the economic indicators there have been increases in the number and proportion of participants

TABLE 6.13

Educational, Societal, Economic, Parenting, and Other Outcomes for 1997-1999

Outcomes	Number of Participants and Proportion of Total Participant Population by Outcome Category					
	Fiscal Year 1997		Fiscal Year 1998		Fiscal Year 1999	
EDUCATIONAL	n=16,008		n=20,294		n=23,381	
Obtained Adult HS Diploma or Passed the GED	890	5.56%	1,189	5.86%	1,626	6.95%
Entered Education or Training Program	152	0.95%	233	1.15%	557	2.38%
SOCIETAL						
Received U.S. Citizenship	193	1.21%	204	1.01%	221	0.95%
Registered to Vote or Voted for the First Time	82	0.51%	103	0.51%	112	0.48%
ECONOMIC						
Gained Employment	560	3.50%	901	4.44%	1,470	6.29%
Obtained Job Advancement or Secured Employment Retention	580	3.62%	927	4.57%	2,334	9.98%
Removed from Public Assistance	24	0.15%	56	0.28%	69	0.30%
PARENTING						
Read More to Children	838	5.23%	1,051	5.18%	112	0.48%
Greater Involvement in Children's Schooling	1,478	9.23%	1,715	8.45%	147	0.63%
OTHER	1,640	10.24%	1,330	6.55%	15,740	67.32%

Source: Massachusetts Department of Education, Federal Statistical Reports.

reporting favorable outcomes. The percentage of participants who advanced in or secured their jobs is almost 10 percent, and 1,470 participants gained employment.

There has been a sharp decrease in the parenting outcomes measures, both in absolute numbers and in proportion of participants. We think these outcomes might be captured in the "other" category, which has increased tenfold. "Other" outcomes include passing some of the five GED tests, increasing parent-child interactions, engaging in preventive health care activities, and other outcomes. In 1999, 67 percent of participants reported having achieved other outcomes.

In 1999, only 557 students entered an education or training program after completing an ABE class.

While these data are informative, particularly when attempting to look at trends over time, there are some serious limitations in interpreting these numbers. As mentioned before, the numbers may seem small, but the data are only for a single year. A student who does not achieve a goal in one year might achieve that goal in the years following participation in a class. A student in a GED class might not take and pass the GED until two years later. That outcome would not be reflected in these numbers. As a consequence, these statistics underreport outcomes.

Moreover, outcomes of students are often unknown. Participation in adult literacy classes is much more fluid than in K-12 classes. Many adults stop attending classes without offering a reason. It could be that a student finds a job that conflicts with the schedule of the class and simply stops attending classes. Though that would be a positive outcome, this outcome would not necessarily be known and therefore would not be recorded by the program.

Finally, the data are somewhat misleading because they do not compare the intentions of the students to the given outcomes. For example, in 1998, 1,189 students or 5.86 percent of the total adult students reported obtaining a GED. The outcome data are reported for all students, but not all students are studying to take GED tests. For most students in ESOL classes, it would not be appropriate to measure whether they have obtained their GED, and students in ESOL classes account for more than half of the students in adult basic education programs. During 1998, only 3,447 students were enrolled in GED preparation programs. A more accurate outcome measure would be that 34 percent of those who came to study for the GED reported passing the test. This more—accurate measure increases the outcome measure sixfold. Even this number is too low. The number would increase if we include the students who passed the test but did not report back to the program and the students who pass the test after completing their courses. Then the outcome measures would likely tell quite a different story, one that is much more positive. This particular problem could be solved fairly easily if the Department of Education matched data between its GED and SMARTT databases.

It only makes sense to compare student outcomes with goals that are appropriate at their level. By measuring outcomes more accurately, we will have a clearer sense of which types of programs are not reaching their objectives. We will also have a better picture of how well students are being served in relation to their goals.

Concluding Thoughts

In this chapter, we have assessed the effectiveness of the adult basic education system in five different ways. We have analyzed the 1998 data, looking at 1) learning gains of the participants; 2) number of hours of instruction received; 3) probability that students will earn a high school credential; and 4) probability of finding a job. Finally, we have looked at a broad range of outcomes from 1997-1999. We find adult basic education to be effective, but there is room for improvement. This analysis provides a baseline from which future improvements can be measured.

Students learn in ABE classes. More than half of the students achieved learning gains, and almost one-third gained more than two levels. While this is quite positive we do have some concerns about the quality of data, which we discuss below. In terms of hours, students spend on average slightly less than 100 hours in class over a twelve-month period, and that number appears to be increasing. Massachusetts is doing well in this respect. As students receive more hours of instruction, more of them achieve learning gains. Our conclusion: If we get students to come to class and get them to stay longer, they learn more. We need to focus on doing both.

Whether a student is likely to earn a high school credential is influenced by the number of hours of instruction, the student's background characteristics, and the program through which that student attends

classes. While we know the site is important, we don't know exactly what matters about a given site, and we recommend this as a topic of future study. Qualitative studies might be instructive in trying to disentangle this effect. We looked at intensity of instruction, which is the number of hours a class meets per week. For students preparing to earn a high school credential, intensity makes a difference and intensive instruction appears more effective than instruction over a longer period of time with fewer hours of classroom instruction per week.

There are several limitations to our analysis. First, we do not have a counterfactual case. That is, we don't know what would have happened to these participants if they had not participated in the programs. Perhaps some of them would have studied for and passed the GED on their own.

Test scores may not capture all outcomes, but they do provide a common language and a basis of comparison to evaluate students' progress.

The quality of data is a second limitation. The Adult and Community Learning Services cluster within the Mass. Department of Education, led by Robert Bickerton, has made great efforts to improve the collection and quality of data. Prior to 1997, the Department used a paper-based, aggregate reporting system that only collected program-level data. It did not collect data for the individual students. As a result, the Department had no sense of whether students were double-counted within and between programs and whether outcomes were overstated, understated, or accurate.

With the implementation of the SMARTT system, the quality of the data has improved. When duplication and other errors were removed, the number of students who appeared to achieve favorable outcomes decreased and on the surface it appeared that the programs were not doing as well. These changes, however, are clearly related to the state's improved data-collection efforts. Robert Bickerton and the members of his staff deserve praise for their commitment to providing a more accurate picture of our ABE and ESOL efforts.

That is the good news. Much work remains, however, to improve the quality of data so that we can be more confident of their accuracy. Currently, programs report a student's entry and exit level, according to federal and state Department of Education definitions. These levels are supposed to be based on standardized tests or any of the more than fifty other assessments that the Mass. Department of Education acknowledges. Programs are expected to indicate which method they used and provide the dates of assessment. When we reviewed the 1998 data, we found that the assessment dates and methods related to entry and exit levels were lacking for many students.[29] Because of this, we could not tell when and how most students were assessed and how programs assigned grade levels or student-performance levels.

The design of the database compounds these difficulties. The Fiscal Year 1998 system is designed so that an exit level is required in the database. In cases where standardized tests were not administered, programs use alternative assessments such as student portfolios or teacher observations to estimate a student's learning gains. Because of the lack of information entered, there is no way to know exactly how many of the assessments were based on standardized tests as opposed to estimates, and there is no way to account for differences between these assessment methods. Moreover, when the data are entered, programs have access to the initial assessment score, and therefore, exit levels may be biased.

All of this reinforces the need to assess students using standardized tests or other forms of standardized assessment and report scores not grade levels. Test scores may not capture all outcomes, but they do provide a common language and a basis of comparison to evaluate students' progress. If tests are carefully chosen, test scores are less subject to bias, and may more accurately capture smaller learning gains.

In our conversations with people at the Department of Education, it appears that they are aware of these issues and are currently working to improve the data and build in mechanisms to assure data quality. If we want to measure the return on our investment in the adult basic education system in order to improve programs that do not measure up, then we need more accurate data to evaluate the efficacy of the programs. It is critical that the Mass. Department of Education address the quality of existing data. We also suggest that 1) they establish a longitudinal data set that tracks a subset of students over a longer period of time, and 2) they explore the possibility of an evaluation research project using a randomized experiment. The

29 According to staff members at the Department of Education, if the date of assessment was missing or invalid, the date was set to the start of the fiscal year or the intake date (whichever was the latest). For the purpose of satisfying SMARTT rules, this sufficed.

Department of Education's data should also be pooled with that of other state agencies so it is possible to track participants over time on a variety of measures. Texas, Florida, and other states are leading the way in matching data of different state agencies to get a more complete picture of what happens to their students after they leave the classroom. There is no reason that the Department of Education's ABE database should not already be connected to its own GED database. It should also be connected to the databases of other state agencies. To find out what happens to ABE participants in the labor market over time will require the collecting of social security numbers, which is the identifier used by the Department of Revenue. The more we know about what happens to participants, the better we can serve them and the better their outcomes should be, which after all is the goal of the adult basic education system—giving people tools to build their skills and thus improve their lives.

CHAPTER 7 TOWARD AN INTEGRATED JOB TRAINING AND ADULT BASIC EDUCATION SYSTEM

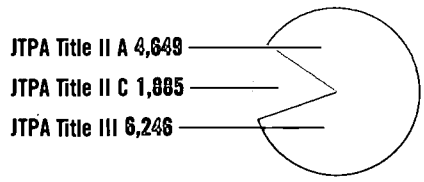
IN MASSACHUSETTS, job training and adult basic education are run as two separate systems governed by different agencies with little institutional linkage between them. In this chapter, we analyze the skills of the people who come for job training and then look at what types of services they receive, and we arrive at the strong conclusion that job training must be much more closely linked to adult basic education instruction. Primarily because of limited funding, not all of the eligible people who come for training actually receive training and education services. When we look at who receives help and what type of help they receive, a troubling pattern emerges. We find that those with the weakest basic skills are the least likely to receive employment and training services. Despite the substantial need, only a small fraction of participants received basic skills training. Finally, the enrollees with the strongest skills were the most likely to receive the two types of training—occupational training and on-the-job training—that are associated with higher employment rates and higher weekly wages. In short, we find a system that often works to help the most literate and makes fewer provisions to help those most in need of help: enrollees with the weakest skills.

The Job Training Partnership Act (JTPA)

One of the central components of the Commonwealth's workforce development system is the set of employment and training programs under the federally funded Job Training Partnership Act (JTPA). This system has been recently replaced with the Workforce Investment Act (WIA), which was enacted in 1998. The WIA workforce development system began full-scale operations in our state in July, 2000.[1] From July 1, 1998 to June 30, 1999—Program Year (PY) 1998—more than 13,000 youth and adults participated in various JTPA programs in the Commonwealth. Almost all of the people served participated in one of three programs under JTPA. JTPA Title II A provides employment and training services for economically disadvantaged adults (22 and older). JTPA Title II C is an education or training program for primarily disadvantaged youth under the age of 22. Finally, JTPA Title III offers a diverse array of services for dislocated workers. Figure 7.1 shows the number of participants in each of these programs.[2]

FIGURE 7.1

Number of Terminees from JTPA Title II A, Title II C, and Title III Programs in Massachusetts, PY 98



Total, Above Three Programs: 12,780

Source: SPIR PY 98, public use tapes, tabulations by Center for Labor Market Studies.

Over the past six years, the JTPA system has collected a uniform set of demographic, socioeconomic, and human capital characteristics on enrollees in the employment and training programs funded under the act, including their reading and math proficiencies at time of entry into the system. This chapter is devoted to a description and analysis of the reading and math proficiencies of the participants in various JTPA programs. We also look at the types of program services received by participants. The possible services include: basic skills instruction, occupational classroom training, on-the-job training, work experience, job search training or employability development services. Finally, we

* This chapter was written by Andrew Sum with Sheila Palma and Mykhaylo Trub'skyy.

1 For a review of the organizational structure and performance of the JTPA system in the nation and the state, see John D. Donahue, Lisa Lynch, and Ralph Whitehead, Jr., *Opportunity Knocks: Training the Commonwealth's Workers for the New Economy* (Boston: The Massachusetts Institute for a New Commonwealth, 2000); Garth Mangum, Stephen Mangum, Andrew Sum, James Callahan and Neal Fogg, *A Second Chance for the Fourth Chance: A Critique of the Workforce Investment Act of 1998* (Baltimore: Sar Levitan Center for Social Policy Studies, Johns Hopkins University, 1999).

2 Among the other JTPA programs operating in the state were those for older workers funded under Section 204(d) of the act. Under the newly enacted Workforce Investment Act (WIA), there is no separate set aside of monies for older workers.

examine the early post-program employment and weekly earnings outcomes of terminees from selected types of education and employment and training programs.

Reading and Math Proficiencies of JTPA Participants at Time of Program Entry

The reading and math proficiencies of JTPA program participants are assessed at the time of their entry into the program.[3] The entry-level reading and math scores of individual JTPA enrollees were recorded on the Standardized Program Information Reporting (SPIR) system, the national JTPA management information system of the U.S. Department of Labor.[4] The distributions of the reading and math scores for terminees from JTPA Title II A, Title II C, and Title III programs during PY 98 were examined to estimate the median test scores (in grade level equivalents) of all terminees and those in selected educational attainment groups (Table 7.1).[5] The median test score for any group is that score at which 50 percent of the participants are below and 50 percent are above.

TABLE 7.1

Median Reading and Math Scores at Time of Program Entry for Participants in Massachusetts JTPA Programs, Total and by Schooling Level at Entry

READING

Schooling Level	Title II A	Title II C	Title III
Less than 12 Years	7.9	7.8	7.0
12 Years	10.6	10.0	10.7
13 or More Years	12.0	12.5	12.0
All	10.0	8.6	10.6

MATH

Schooling Level	Title II A	Title II C	Title III
Less than 12 Years	6.3	6.9	6.0
12 Years	7.7	8.6	9.0
13 or More Years	9.0	9.0	10.3
All	7.4	7.4	9.0

Findings on the entry reading and math proficiencies of terminees from PY 98 JTPA programs in Massachusetts can be summarized in the following manner:

• For participants in each of the three JTPA programs, median reading scores were consistently higher than median math scores, which were quite low. For example, among participants in JTPA Title II A programs, the median reading-test score was at a 10.0 grade level, while the median math score was at a 7.4 grade level.

• In the aggregate, participants in JTPA Title III programs for dislocated workers had higher median reading and math scores than their counterparts in the other two programs. For example, the median math test score for Title III participants was 9.0 as opposed to only 7.4 for their counterparts in Title II A and Title II C programs. The math and reading test score advantages of Title III participants were primarily because Title III participants had higher education levels. Within any given educational attainment group —high school dropouts for instance—the median reading-test scores of JTPA Title III participants were no higher than those of similarly educated enrollees in JTPA Title II A and II C programs.

• For participants within each JTPA program, median reading and math scores were positively associated with their level of educational attainment at enrollment. For example, among JTPA Title II C participants, the median pre-program reading-test scores of PY 98 terminees ranged from a 7.8 grade level for those lacking a high school diploma to a 10.0 grade level for those possessing a high school diploma, to a high of a 12.5 grade level for those with 13 or more years of schooling.[6] In all three programs, these test score patterns prevailed. Participants lacking high school diplomas fared the worst on the reading and math tests. Their educational deficits were frequently accompanied by severe reading and math deficits. These findings are quite similar to those from the national NALS assessment and the NAEP Young Adult Literacy Assessment.[7]

The proficiencies of program enrollees are important, because many vocational and technical training programs have a minimum ninth or tenth grade equivalent reading or math proficiency as entry criteria for their programs. The ability to complete higher-level technical and vocational training programs on or off the job is also strongly associated with reading and math proficiencies. Moreover, persons who lack a 9.0 grade proficiency in reading or math will have a difficult time passing the GED exam, and dropouts with such low test scores rarely return to school and obtain regular high school diplomas.[8] Thus, the future employment and earnings prospects of these JTPA enrollees will be critically influenced by their reading and math proficiencies, particularly in the context of increasing skill requirements of new jobs in the Massachusetts economy.

3 A number of different aptitude and academic achievement tests could be used by program operators including the ABLE and CASAS tests; however, the Test of Adult Basic Education (TABE) was the most frequently used test.

4 For a review of the individual data elements that constitute the SPIR reporting system, see Social Policy Research Associates, Inc., "An Overview of PY 94 SPIR Public Use Data Files," 1995.

5 The PY 98 public-use tapes actually contain data on five quarters of terminees, including those from the last quarter of PY 97 and the four quarters of PY 98.

6 Some of the participants in JTPA Title II C programs in PY 98 were still enrolled in high school at time of entry. Approximately one-fourth of the PY 98 participants were high school students, most of whom had very weak reading and math proficiencies.

7 See Irwin S. Kirsch, Ann Jungeblut, Lynn Jenkins, and Andrew Kolstad, *Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey* (Washington, D.C.: National Center for Education Statistics, 1993); Irwin S. Kirsch and Ann Jungeblut, *Literacy: Profiles of America's Young Adults —Final Report* (Princeton, N.J.: National Assessment of Educational Progress, 1986).

8 For national research on this set of issues, see Andrew Kolstad and Jeffrey A. Owings, "High School Dropouts Who Change Their Minds About School," (Washington, D.C.: U.S. Department of Education, 1986); Andrew M. Sum, Neeta Fogg, and Garth Mangum, et al., *Confronting the Youth Demographic Challenge: Current and Future Labor Market Prospects of Out-of-School Youth* (Baltimore: Sar Levitan Center for Social Policy Studies, Johns Hopkins University, 2000).

JTPA Title II A Participants

A substantial number of JTPA II A participants' reading and math proficiencies were below the ninth-grade level. The distribution of Massachusetts JTPA Title II A participants by their reading and math scores at entry into the program are displayed in Figure 7.2 and Table 7.2.[9] One-fourth of the Title II A enrollees had less than a seventh-grade proficiency in reading and 40 percent had less than a ninth-grade proficiency. At the upper end of the distribution, nearly 40 percent of the Title II A enrollees had an eleventh grade or higher reading proficiency. JTPA Title II A enrollees were thus a heterogeneous group in terms of reading skills. The math test scores of JTPA Title II A enrollees were quite poor.[10] Slightly over 40 percent of the JTPA Title II A enrollees fell below the seventh-grade equivalent in math-test scores, and 70 percent could not achieve a ninth-grade math proficiency (Figure 7.2). The distribution of the Title II A enrollees' math scores also varied considerably by their educational attainment at entry. Eighty-seven percent of the enrollees lacking a high school diploma had math scores below the ninth-grade level compared to 67 percent of those with 12 years of schooling and only 48 percent of those who completed 13 or more years of schooling (Table 7.2).

JTPA Title II C Participants

Many of the participants in JTPA Title II C youth programs also had weak reading and math proficiencies. Nearly 54 percent of the PY 98 enrollees had entry reading scores below the ninth grade, and just under 72 percent of them could not obtain a ninth-grade-proficiency in math (Figure 7.3). Similar to the findings for JTPA Title II A participants, the test score distributions of the Title II C enrollees varied systematically by their level of schooling at entry into the program. Nearly 78 percent of the enrollees with fewer than 12 years of schooling had less than a ninth-grade proficiency in math compared to 55 percent of those who had completed 12 years of school and 49 percent of the relatively small number of participants with 13 or more years of schooling (Table 7.3).[11]

JTPA Title III Participants

The reading and math proficiencies of JTPA Title III participants were slightly higher than those of the participants in the other programs. Among participants in JTPA Title III education and training programs, nearly 30 percent had reading proficiencies below the ninth-grade level when they entered into the JTPA system and close to 50 percent had math proficiencies below the ninth-grade level (Figure 7.4). The math proficiencies of these dislocated workers also varied quite widely by their formal schooling attainment. Of those dislocated workers who had not graduated from high school, 84 percent had math proficiencies below the ninth-grade level, and only six percent obtained a math score at or above the eleventh-grade level. Among those high school graduates with no post-secondary schooling, slightly fewer than half had a math proficiency below the ninth-grade level, and only 31 percent of those dislocated workers with one or more years of college had a math score below the ninth-grade level (Table 7.4).

The formal schooling and math proficiencies of JTPA Title III program participants upon entry to the program have a profound influence on their post-pro-

9 Reading and math test scores were available for nearly 92 percent of all terminees from JTPA Title II A programs during PY 98.

10 Part of the explanation for the poorer performance in math is due to the lack of recent practice in solving math problems. Past research on the learning gains of literacy-program participants has shown a relatively high learning gain (1.0 grades or more) from early hours of instruction involving reviews of basic math materials, but greater gains require 100 or more hours of instruction per additional grade gain.

11 Fewer than 2 percent of the PY 98 Title II C terminees had completed 13 or more years of schooling at the time of their entry into the program.

12 Such individuals are not taken into consideration in calculating performance standards for JTPA programs. Unfortunately, there is little information available on their employment or schooling status at time of termination from the local JTPA system, and they are not included in the follow-up surveys for Title II A programs.

FIGURE 7.2

Reading and Math Score Proficiencies at Time of Entry of JTPA II A Participants*

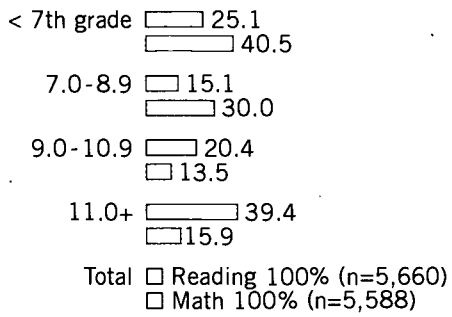


FIGURE 7.3

Reading and Math Score Proficiencies at Time of Entry of JTPA Title II C Participants

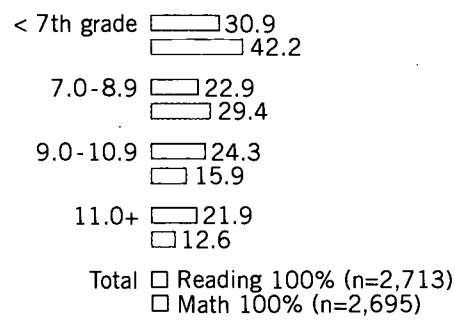
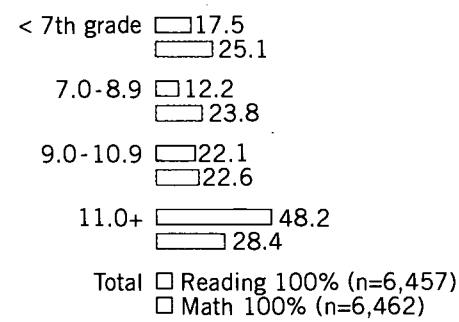


FIGURE 7.4

Reading and Math Score Proficiencies at Time of Entry of JTPA Title III Participants



Because these analyses are based on five quarters of data, the total numbers are different from the total numbers presented in Table 7.1 which is the annual total for Program Year 1998.

TABLE 7.2

Percentage Distribution of Massachusetts JTPA Title II A Terminees by Math Proficiency and Educational Attainment at Time of Entry

Math Score	HS Dropout (n=1,596)	HS Graduate (n=3,245)	13 or More Years of Schooling (n=747)
< 7th Grade	61.6	34.4	22.0
7.0 – 8.9	25.4	33.2	26.2
9.0 –10.9	6.2	15.6	19.9
11.0+	6.7	16.8	31.9

TABLE 7.3

Percentage Distribution of Massachusetts JTPA Title II C Terminees by Math Proficiency and Educational Attainment at Time of Entry

Math Score	HS Dropout (n=1,966)	HS Graduate (n=694)	13 or More Years of Schooling (n=48)
< 7th Grade	50.2	20.5	20.0
7.0 – 8.9	27.4	35.1	28.9
9.0 –10.9	13.7	22.0	15.6
11.0+	8.7	22.4	35.6

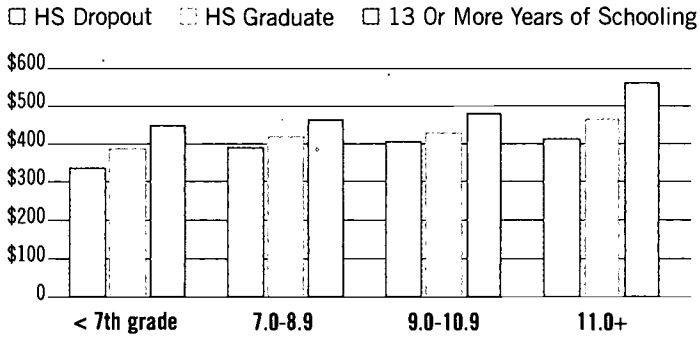
TABLE 7.4

Percentage Distribution of Massachusetts JTPA Title III Terminees by Math Proficiency and Educational Attainment at Time of Entry

Math Score	HS Dropout (n=1,966)	HS Graduate (n=694)	13 or More Years of Schooling (n=48)
< 7th Grade	60.0	22.9	12.0
7.0 – 8.9	23.5	25.8	19.1
9.0 – 10.9	10.1	25.5	22.7
11.0+	6.3	25.8	46.2

FIGURE 7.5

Mean Weekly Earnings of Job Placed JTPA Title III Terminees in Massachusetts, By Math Proficiencies and Educational Attainment



Source: PY 98 SPIR public use tapes, tabulations by Center for Labor Market Studies.

gram weekly wages upon re-employment. Of all the JTPA Title III participants who were placed in a job, the mean weekly wages at time of placement ranged from a low of $343 for high school dropouts with a math score below the seventh-grade level, to $428 for high school graduates with an entry math score between the ninth- and tenth-grade levels, to a high of $561 for those with some post-secondary schooling and math scores at or above the eleventh-grade level (Figure 7.5). For former dislocated workers in each educational attainment group, mean placement wages rose continuously as their entry math proficiencies increased.

Who Receives Training and Educational Services

The demand for training is far greater than the number of available slots, and, as a consequence, many eligible people do not receive any training. This section examines what types of program services the Program Year 1998 JTPA participants in Massachusetts received. There are a variety of education and training services offered. They include basic skills instruction, occupational classroom training, on-the-job training, work experience, job search training, and employability development services. The eligible enrollees in Title II A and Title II C who do not receive training or educational services receive what is called "objective assessment" services.[12] To analyze who gets what services, we asked: Does the pattern of services participants received vary by their reading and math scores at the time of entry?

Within the Commonwealth, a substantial number (41 percent) of the terminees from JTPA Title II A programs in recent years have only received objective assessment services. In Program Year 1998, that means roughly 1,900 people who were eligible for training who came to the door with the hope of improving their skills left with no training or educational services. Whether an enrollee receives actual training or only receives an "objective assessment" varies by the person's reading and math test scores upon entry. Participants with the weakest reading and math skills were most likely to receive only an objective assessment. For example, one-half of the Title II A enrollees with a reading score below the seventh grade level only received objective assessment services compared to 37 percent of those with a reading test score between the ninth-and-tenth-grade levels (Table 7.5). Similar pat-

terns prevailed for participants classified by their math skills. The people who come for help with the weakest skills are the least likely to get any actual training or educational services.

Despite their weak skills, relatively few JTPA Title II A enrollees received any formal basic skills instruction.[13] Of those who received any services, only 11 percent received basic skills instruction, including only 20 percent of those with math skills below the seventh-grade level and only nine percent of those with math test scores in the seventh-to-eighth-grade range. Clearly, there is a substantial need to improve access of economically disadvantaged adults to ABE, ESOL, and workplace literacy programs. There should be systems in place to integrate ABE and WIA workforce development programs in order to serve economically disadvantaged adults adequately.

TABLE 7.5

Number and Percent of PY 98 JTPA Title II A Terminees in Massachusetts Who Only Received an "Objective Assessment" by Reading and Math Proficiency at Time of Entry

Entry Reading Score	Number With Only Objective Assessment	Percent With Only Objective Assessment
< 7th grade	708	49.9
7.0 – 8.9	384	44.8
9.0 – 10.9	430	37.3
11.0 or Higher	798	35.7
All	2,320	41.0
Entry Math Score		
< 7th grade	1,086	47.9
7.0 – 8.9	589	35.1
9.0 – 10.9	246	32.6
11.0 or Higher	323	36.2
All	2,244	40.2

About 716 disadvantaged youth in PY 98 Title II C programs (38 percent) did not receive any training or educational services.[14] Again, those with lower reading and math scores were more likely to receive only objective assessment services. For example, 41 percent of the enrollees with entry reading scores below the seventh-grade level only received objective assessment versus 35 percent of those with a ninth-to-tenth-grade reading proficiency and only 33 percent of those with an eleventh-grade level or higher reading test score (Table 7.6).

TABLE 7.6

Number and Percent of PY 98 JTPA Title II C Terminees in Massachusetts Who Only Received an "Objective Assessment" by Reading and Math Proficiency at Time of Entry

Entry Reading Score	Number With Only Objective Assessment	Percent With Only Objective Assessment
< 7th grade	346	41.2
7.0 – 8.9	242	39.0
9.0 – 10.9	233	35.3
11.0 or Higher	197	33.1
All	1,018	37.5
Entry Math Score		
< 7th grade	461	40.6
7.0 – 8.9	285	36.0
9.0 – 10.9	130	30.4
11.0 or Higher	132	38.8
All	1,008	37.4

Many of these youth had quite limited reading and math skills. Yet only 27 percent received any formal basic skills instruction in reading or math. Although if they did receive basic skills instruction, they tended to receive many hours of instruction. The median number of hours of instruction was 208. Those enrollees with the weakest reading and math skills were no more likely to receive basic skills instruction than the average enrollee. Only 27 percent of those JTPA Title II C enrollees with reading scores below the seventh-grade level received any basic skills instruction.

The Title III program does not include only an "objective assessment" as part of the program termination categories, so there are not comparable numbers for these participants. We do know, however, that many Title III participants entered with weak skills, and few received basic skills instruction. In fact, just less than 13 percent of Title III participants received basic skills instruction. Table 7.7 summarizes the percentage of JTPA participants who received basic skills instruction compared to the percentage whose entering skills were below the ninth-grade level. Compared to the strong need for basic skills instruction, relatively few participants received any basic skills instruction.

From the available information, we cannot determine the cause of this low rate of enrollment in basic skills instruction. It could have been due to a lack of interest on the part of enrollees, to program design con-

13 Data are based upon hours of program participation by service component. Some of the participants in occupationally oriented classroom training programs may have received some basic skills instruction as part of the occupational training, but such integrated instruction cannot be identified with the available data base.

14 The PY 98 data in Table 7.11 contains information on five quarters of terminees from JTPA Title II C programs, including youth terminating during the last quarter of PY 97.

TABLE 7.7

Percentage of JTPA Participants who Received Basic Skills Instruction Compared to Entering Level Skills

Program	Percent with Reading Skills Less than the 9th Grade	Percent with Math Skills Less than the 9th Grade	Percent that Received Basic Skills Instruction
JTPA Title IIA	40.2%	70.5%	11%
JTPA Title IIC	53.8%	71.6%	27%
JTPA Title III	29.7%	48.9%	13%

straints, or to a lack of available literacy program slots. An ethnographic evaluation of the enrollment and referral experiences of youth and adults with limited literacy experiences is clearly needed to understand why so few enrollees received any basic skills instruction.

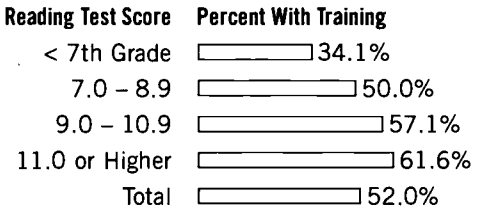
Type of Training Received

Different participants receive different types of training. The type of training received is important, because as we shall see, it has an effect on the participants' employment rate, earnings, and occupation. The main program activity for most JTPA program participants in the Commonwealth is occupational classroom training.[15] We examined the mix of program services received by each individual enrollee in JTPA Title II A, II C, and III programs during PY 98 to identify who participated in an occupationally oriented classroom training program or an on-the-job training program. Participation in one of these two training programs was then cross-tabulated against the reading proficiencies of enrollees at time of entry. This analysis can be used to answer the following question: how were the reading skills of enrollees associated with their likelihood of receiving occupational training in the classroom or on-the-job, two types of services associated with higher employment rates and earnings?[16]

Among all JTPA Title II A enrollees, including those only receiving objective assessment, the fraction receiving some type of occupational training rose consistently with their reading test scores at time of entry. Only 34 percent of the enrollees with reading scores below the seventh-grade level received any occupational training compared to 50 percent of those with reading proficiencies in the seventh-to-eighth-grade range, 57 percent of those with ninth-to- tenth-grade proficiencies, and nearly 62 percent of those with reading test scores at or above the eleventh-grade level (Figure 7.6). Thus, those JTPA Title II A enrollees with the most proficient reading skills were nearly twice as likely as those with the weakest reading scores to have received some occupational training. Both nationally and in the state, those with better reading test scores also were considerably more likely to have obtained training in technical, professional, managerial, or more highly-skilled clerical occupations.[17]

FIGURE 7.6

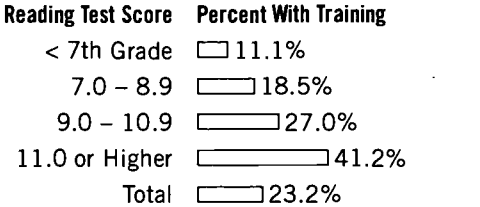
Percent of Massachusetts JTPA Title II A Terminees in PY 98 Who Received Occupational Training or On-the-Job Training by Reading Score at Time of Entry (N=2,645)



The relationship between the entry reading scores of JTPA Title II C enrollees and their participation rates in occupational training programs was also quite strong. Overall, only 23 percent of the enrollees in Title II C programs received any occupational training either in a classroom setting or on the job. The proportion of Title II C participants receiving such training ranged from a low of 11 percent for those with reading scores below the seventh-grade level to a high of 41 percent for those with reading scores above the eleventh-grade level (Figure 7.7). This is similar to national findings. Nationally, JTPA II C terminees with reading scores at or above the eleventh-grade level were twice as likely to receive training as their counterparts with reading scores below the seventh-grade level (43 percent compared to 20 percent).

FIGURE 7.7

Percent of Massachusetts JTPA Title II C Terminees in PY 98 Who Received Occupational Training or On-the-Job Training by Reading Score at Time of Entry (N=631)



Again, we find the same pattern for JTPA Title III participants. A slight majority of the participants

15 For participants in Title II C programs, slightly more enrollees received basic skills instruction than occupational skills training during PY 98.

16 Relatively few JTPA enrollees in Massachusetts received OJT. The numbers ranged from only 1 in Title II C to a high of 38 in Title II A programs.

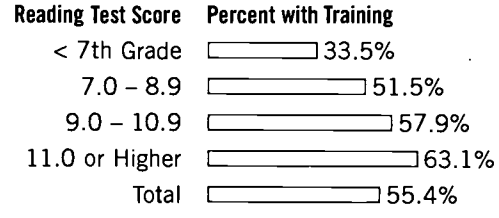
17 For example, nationally only 10 percent of JTPA Title II A training program participants with reading scores below the seventh-grade level received training in a professional, managerial, or technical occupation compared to 27 percent of those with reading scores at or above the eleventh-grade level.

in JTPA Title III programs for dislocated workers during PY 98 received some occupational training, primarily classroom training. The percent of Title III enrollees receiving occupational training varied substantially by their reading proficiencies at the time of entry. Only one-third of the terminees with entry reading scores below the seventh-grade level received any occupational training compared to 52 percent of those with reading scores between the seventh-and-eighth-grade levels and 63 percent of those with reading scores above the eleventh-grade level (Figure 7.8).

Across all three major JTPA programs during PY 98, the likelihood of an enrollee receiving occupational training was strongly associated with his or her reading and math skills upon entry. The lower a student's reading or math proficiencies, the less likely that he would be enrolled in an occupational training program. In the absence of a more comprehensive and closely integrated ABE and ESOL system that can strengthen their basic skills and then direct them to a training program, economically disadvantaged adults and youth and dislocated workers with weak reading and math skills will continue to be shut out of opportunities for developing new occupational skills.

FIGURE 7.8

Percent of Massachusetts JTPA Title III Terminees in PY 98 Who Received Occupational Training or On-the-Job Training by Reading Score at Time of Entry (n=3,577)



Short-term Employment and Earnings Outcomes

From the data collected, we also know about hours of work, hourly wages, and occupational titles of the jobs the participants held at the time of their termination from the local JTPA system.[18] Three-month follow-up information is also collected for a sample of terminees from JTPA Title II A and III programs. In this section, we present key findings of our analyses of the short-term employment and weekly earnings outcomes for terminees from PY 98 JTPA Title II A, Title II C, and Title III programs. We look at employment rates and mean weekly earnings for participants of each type of program.[19]

Analyses of national JTPA outcome data find that the employment rates and weekly earnings of terminees were significantly associated with their schooling levels, their reading and math proficiencies at time of entry, and the types of program services they received. Participants in occupationally oriented classroom training programs and on-the-job training (OJT) programs tend to have the highest employment rates while those completing occupational training programs receive the highest mean hourly and weekly earnings.[20] For example, the mean hourly wage for all job placed terminees from PY 96 Title II A programs across the entire country was $7.52.[21] These mean hourly wages ranged from lows of $5.89 and $6.43 for terminees from work experience and basic skills programs to a high of $8.08 for terminees from classroom training programs. This is consistent with recent findings of a statistical analysis of the employment rates and weekly earnings of terminees in New England which found that participation in occupationally oriented classroom training programs, all else being equal, significantly increased the likelihood of employment and improved the weekly earnings from the jobs held immediately after termination.[22]

The pattern in Massachusetts is the same. The employment rates of terminees from JTPA programs under each of the three titles were strongly associated with the type of program in which they had been enrolled. For all three titles, employment rates are typically highest for those participants who were enrolled in occupational training or OJT programs and lowest for those participating in basic skills and work experience programs. For example, the overall employment rate for terminees from Title II A programs was just under 70 percent; however, the employment rates for these terminees ranged widely across programs from a low of 37 percent for basic skills training programs and 40 percent for work experience programs to highs of 79 percent for OJT programs and 82 percent for those engaged in job search training. Among Title II C terminees, close to 45 percent were able to obtain a job at time of termination; however, the employment rates for JTPA Title II C program terminees varied from lows of 25 percent and 28 percent for those in employability skills development and basic skills training, respectively, to a high of 72 percent for those par-

18 For JTPA Title II A and Title II C programs, termination data are not reported for those terminees who only received objective assessment services. This category of service does not exist in JTPA Title III programs.

19 The employment and earnings outcomes pertain to the terminees from five quarters of JTPA program operations, covering the last quarter of PY 97 (April-June, 1998) and the four quarters of data from PY 98 programs in the state.

20 For a review of national JTPA findings on employment and earnings outcomes for participants with varying backgrounds and program services, see Mangum et al., *A Fourth Chance for the Second Chance.*

21 See Mangum et al., *A Fourth Chance for a Second Chance,* "Table 3," p. 18.

22 See Andrew Sum, Yanqun Shi, and Sheila Palma, "Labor Market Outcomes of JTPA Programs in New England: Implications for WIA Program Implementation," Paper Prepared for the Regional Town Meeting on Workforce Development, Boston, 1999.

TABLE 7.8

Employment Rates(1) of JTPA Title II A, Title II C, and Title III Terminees by Type of Program, Massachusetts: PY 98

Type of Program	Title II A	Title II C	Title III
Basic skills training only	37.0	28.1	58.9
Work experience only	40.0	40.1	–
Multiple training	68.4	55.6	74.5
Occupational training only	71.8	71.7	77.1
On-the-job-training only	78.9	–	92.0
Employability skills/job search only	82.1	25.2	68.7
Total	69.7	44.8	72.3

Note: (1) Employment status is measured at time of termination from the JTPA system.
– Implies fewer than four terminees in group.
Source: PY 98 SPIR public use data tapes, tabulations by Center for Labor Market Studies, Northeastern University.

TABLE 7.9

Mean Weekly Wages(1) of Employed JTPA Title II A, Title II C, and Title III Terminees by Type of Program, Massachusetts PY 98

Type of Program	Title II A	Title II C	Title III
Basic skills training only	$252	$198	$366
Work experience only	–	$252	–
Multiple training	$299	$248	$400
Occupational training only	$327	$289	$468
On-the-job-training only	$335	–	$408
Employability skills/job search only	$301	$181	$558
Total	$321	$252	$492

Note: (1) Weekly wages are those prevailing in jobs held at time of termination from the local JTPA system.
– Implies fewer than four terminees in group.
Source: PY 98 SPIR public use data tapes, tabulations by Center for Labor Market Studies, Northeastern University.

ticipating in occupational skills training programs (Table 7.8). Similar employment rate patterns, though accompanied by smaller differentials, prevailed for Title III programs.

Weekly earnings of those terminees placed in employment also varied considerably by the type of program in which they participated (Table 7.9). Among employed JTPA Title II A terminees, mean weekly wages at time of termination were $321; however, the mean values of these weekly earnings ranged from a low of $252 for those only participating in basic skills programs to highs of $327 and $335 for those enrolled in occupationally-oriented classroom training and OJT programs, respectively (Table 7.9). Among both JTPA Title II C and Title III terminees, mean weekly earnings of employed graduates from occupational training programs were $90 to $100 higher than those of basic skills training graduates. Basic skills training by itself does not generate as favorable post-program labor market outcomes as does classroom training, OJT, or combinations of education and training.

Graduates of classroom training programs, especially longer term programs, are significantly more likely to find jobs and obtain higher weekly earnings in the early post-program period. While the outcomes data in Tables 7.8 and 7.9 represent raw, unadjusted outcomes, findings from other statistical analyses that adjust for pre-existing differences in participant characteristics confirm this finding. Unfortunately, we do not know what happens to participants over time, because long-term follow-up data on the employment and earnings experiences of JTPA terminees are not available in Massachusetts. The absence of such data clearly constrains our ability to evaluate the longer-term labor market outcomes of programs, but we do know that in the short-run, classroom training and on-the-job training make a difference in participants' wages.

The types of occupational training services received by JTPA enrollees and their ability to obtain employment related to the occupational areas of their training were also associated with their entry reading and math proficiencies. Participants with higher proficiencies were more likely to have access to occupations that include higher-paying jobs. Among all employed JTPA Title II A terminees, slightly under 15 percent held a professional, managerial, or technical occupation at termination from the local JTPA system (Table 7.10). The fraction of JTPA Title II A terminees working in these more highly skilled occupations ranged from only 11 percent for those with math proficiencies below the seventh-grade level to a high of nearly 23 percent for those with math proficiencies at or above the eleventh-grade level. Enrollees with higher math scores also were more likely to obtain access to jobs in clerical and administrative support occupations while their peers with weaker math scores were more frequently employed in service and semi-skilled blue collar occupations. These patterns also held among employed terminees from JTPA Title III programs. Only 13 percent of JTPA Title III terminees with math scores below the seventh-grade level

TABLE 7.10

Occupational Distribution of Employed JTPA Title II A and Title III Terminees in Massachusetts by Math Proficiency at Entry, PY 98 (Numbers in Percent)

TITLE II A

Occupational Group	All	<7 Grade	7.0 – 8.9	9.0 – 10.9	11.0+
Professional, Management, Technical	14.6	11.4	13.7	13.7	22.7
Clerical/Administrative Support	35.4	26.1	42.6	38.8	35.9
Sales	5.4	5.6	5.4	5.5	4.8
Service	29.7	36.1	27.3	26.4	25.4
Blue Collar Craft and Production	14.7	20.3	11.0	14.8	11.0

TITLE III

Occupational Group	All	<7 Grade	7.0 – 8.9	9.0 – 10.9	11.0+
Professional, Management, Technical	26.8	13.2	22.9	30.5	37.9
Clerical/Administrative Support	24.6	19.9	29.8	28.6	21.2
Sales	5.5	4.5	6.0	5.6	6.0
Service	9.7	16.6	10.7	6.8	5.6
Blue Collar Craft and Production	32.8	45.3	30.0	27.9	28.7

obtained jobs in professional, management-related, or technical occupations while 38 percent of those with math proficiencies at or above the eleventh-grade level did so, a relative difference of nearly three to one.

Future Research and Evaluation Issues

Findings of earlier national and state impact evaluations of the effectiveness of employment and training programs for disadvantaged out-of-school youth and welfare recipients have found that these programs can improve educational outcomes for participants, including gains in reading and math scores and increased high school diploma and GED attainment rates.[23] However, these gains in educational attainment and literacy skills by themselves often did not significantly increase earnings of participants relative to those of a control group. Findings of a recently completed thirty-month follow-up to the national Job Corps program are more promising. The study found that the Job Corps program had a major impact on high school diploma and GED attainment rates (39 percent compared to 23 percent) and vocational certificates (28 percent compared to 8 percent) and was generating favorable earnings impacts 24 to 30 months after assignment.[24] The combination of education, training, work experience, job placement, and follow-up support services provided by Job Corps may be needed to enable disadvantaged youth and adults to secure lasting gains in earnings and employment.

While the SPIR data system captured information on both the receipt of basic skills instruction by enrollees and the hours of such instruction, it did not collect information on the learning gains of participants while enrolled in the program or the degree to which learning gains were related to transitions into employment or other education and training programs. Knowledge of the size of these learning gains and their impacts on post-program educational and labor market success is indispensable for evaluations of the success of workplace literacy and ABE programs in the Commonwealth.

In passing the Workforce Investment Act of 1998, the U.S. Congress established a set of core performance measures for adult education programs funded under Title Two of the legislation. In Section 212(B)(2) of the act, the following core measures of performance were established for annual reporting by each state agency funded under the act:

- Gains in reading, language, math, critical reasoning, and other literacy skills
- Attainment of a high school diploma or its equivalent (GED certificates)
- Placement in or retention in employment or a post-secondary education or training program

States are allowed to expand upon the core performance measures for their adult basic education

23 See Karin Martinson and Daniel Friedlander, *GAIN: Basic Education in a Welfare-to-Work Program* (New York: Manpower Demonstration Research Corporation, 1994); Larry L. Orr, Howard S. Bloom, et. al., *Does Training for the Disadvantaged Work?: Evidence from the National JTPA Study* (Washington, D.C.: The Urban Institute Press, 1996); Peter Z. Schuchet, et al., *National Job Corps Study: The Short-Term Impact of Job Corps on Participants' Employment and Related Outcomes*, (Princeton, NJ: Mathematica Policy Research, February, 2000).

24 See Peter Z. Schuchet, et al., *National Job Corps Study: The Short-Term Impact of Job Corps on Participants' Employment and Related Outcomes.*

programs. Massachusetts should become a leader in this area. In an earlier work on workforce development, Andrew Sum and collaborators recommended that all states improve their knowledge base about the outcomes and effectiveness of future adult basic education programs funded under WIA.[25] The authors recommended that 1) all participants of the adult basic education programs, including those under workforce development, be tracked for at least twelve months and preferably for three years following their initial date of employment through unemployment insurance wage records in order to identify their employment and earnings experiences; 2) adult basic education participants who subsequently enroll in education and training programs be tracked until they complete or terminate from such programs; 3) findings of such evaluation efforts should be prepared annually and used as part of the annual planning process; and 4) participants performing in an exemplary manner in such adult education programs should be provided with incentive bonuses and be given preferential access to available post-secondary education and training programs.

In 1999, only 314 clients were referred to the ABE system by the state's one-stop Career Centers.

If these recommendations were fully adopted by the Commonwealth and if steps were taken to ensure the timely collection and analysis of the requisite data, the knowledge base about the outcomes and effectiveness of adult basic education programs in promoting the goals of workforce development would be substantially strengthened.

Concluding Thoughts

This chapter has uncovered a troubling pattern. When otherwise eligible people approach JTPA service delivery areas to receive job training, the type of help that people get depends on the skills they bring with them. Not all eligible people are served under the Job Training Partnership Act, nor will they be served under the Workforce Investment Act (WIA), which has recently replaced JTPA. Participants come for training with a wide range of skills, and those skills affect who is more likely to receive training and educational services. The skills also affect what type of services they will receive, which in turn will make a difference in their employment and wages after completing the programs.

Many vocational and technical programs have entry criteria that require a minimum of a ninth- or tenth-grade level equivalent of reading and math skills. A substantial number of program participants do not have these skills, and they are the least likely to receive services. They come for help. They are eligible for help. Yet they do not get help and are rarely referred to the ABE system, which could help them acquire these skills. Although it should be automatic that people who come to the door of job-training programs with low reading and math skills be offered or referred to basic skills classes, this rarely happens. According to the Department of Education, in 1999, only 314 clients were referred to the ABE system by the state's one-stop Career Centers.

Those who come to the door with higher proficiencies are more likely to get help. Those with higher proficiencies are more likely to receive occupational training and on-the-job training. Participants in those two types of programs receive higher wages in the labor market and have higher employment rates than participants in other types of programs. This underscores the need for people with weaker skills to receive the same type of help. The goal of the training programs should not be simply to help the best-prepared people. In order to serve a broader base of applicants, the job training system must be much more closely linked to the adult basic education system.

While basic skills classes are effective, they are not enough. Basic skills instruction by itself does not lead to outcomes in the labor market as desirable as when it is combined with other kinds of education and training. Thus, basic skills instruction must be thought of as a first step. Upon completion of basic skills classes, participants must be pointed toward job development, placement activities, and other forms of training that are associated with higher wages. Yet only 557 ABE participants (2.38 percent) said they received education or training as an outcome of their ABE participation. The adult basic education system must also be better integrated with the job training programs. The challenge for the job training programs is not simply to help the most skilled participants earn more, but to give all people, including those who enter with the weakest skills, the same opportunity to upgrade their skills.

25 See Mangum et al., *A Fourth Chance for a Second Chance*, pp. 82-88.

CHAPTER 8 RECOMMENDATIONS

Overview

MassINC has argued in past research reports that a severe labor shortage threatens our state's economic boom. Massachusetts has built its livelihood on the brains and skills of its workers. Yet, we are experiencing significant shortfalls in human capital. There are not enough workers who have the basic skills necessary to qualify for the jobs that are being created today. This trend is reflected in the high vacancy rates for skilled positions. For some positions, such as skilled production workers and managers, the vacancy rates approach an astounding eight percent. The state's current boom simply cannot be sustained without more skilled labor.

At the same time that jobs are going unfilled, a substantial number of workers in the state remain an untapped resource because of their limited ability to participate in the New Economy. People who don't speak English, who lack a high school diploma, or who may have a high school diploma or even some college education but have limited basic skills all have few options in today's labor market. Increasingly they are stuck in low-wage jobs, falling further behind with little chance to share in the state's prosperity.

We now know that the state's investment in adult basic education is justified.

These two phenomena threaten the state's economic prosperity and our future as a true "commonwealth." A workforce with strong skills is the cornerstone of both a healthy economy and a healthy society. The widening gap between the "haves" and "have-nots" erodes the state's middle class. If Massachusetts continues to lose its middle class, a host of social, political, and economic problems will follow.

We believe that a strong adult education initiative that upgrades the skills of the workers of Massachusetts will go a long way toward remedying the challenges we face as a state. A lack of opportunity for workers to build their skills is Massachusetts's weak suit, both compared to other states and compared to our own needs. During these good economic times, the state should do much more to create an adult education and training pipeline that develops workers who have the skills and education our economy requires.

The number of workers in the Commonwealth who are not trained or educated for the New Economy is quite large. There are also some positive signals. First, we know that tens of thousands of workers in the state want to improve their skills. Each year, these workers come to adult basic education programs and other adult education programs to improve their skills. On their own initiative, they find and enroll in programs, demonstrating their desire to upgrade their skill levels—whether by seeking basic skills or English instruction. Most importantly, these citizens are looking for a hand up, not a hand-out.

We also now know that the state's investment in adult basic education is justified. Based on the first comprehensive quantitative analysis of student outcomes in Massachusetts, we conclude that adult basic education is indeed effective. When students attend ABE classes, most of them achieve learning gains, and as students receive more hours of instruction, they make greater gains. Adult basic education classes help workers build their skills and earn high school credentials, both of which are necessary to succeed in the New Economy. If we bring students into the classroom and they stay longer, they learn more. Therefore, we need to focus both on recruitment and retention of students as well as on improving the quality of instruction. At the same time, we need to develop a coherent system to help workers who have a high school credential but still need help upgrading their skills.

Adult basic education should, however, be seen as a first step toward other training and educational opportunities. Adult basic education is effective, but it is not enough. We currently lose the opportunity to make the most of our training and adult basic education systems because of a lack of linkage between the two systems. Workers who come to the door of workforce training programs but who do not have ninth- or tenth-grade-level proficiencies are the least likely to receive training or education services. At this time, we are not sure why this happens, but it is a cause for concern, particularly since these workers are rarely referred to the adult basic education system, which could help them build the required skills. People who come to training programs with low reading and math skills should automatically be offered or referred to basic skills classes. Better coordination on the part of the ABE system is needed as well. Upon completion of basic skills classes, participants must be pointed toward job development, placement activities, community

colleges, and other forms of training that are likely to help them earn higher wages. Such coordination will make a difference in our ability to prepare our workers for the New Economy.

Policy Recommendations

We now turn to specific policy recommendations. We have identified three distinct challenges in building people's basic skills: a Language Challenge, an Education Credential Challenge, and a New Literacy Challenge. It is our conclusion that the ABE system, administered through the Mass. Department of Education, is best suited to address the first two challenges—the Language and Education Credential Challenges. Under the Department of Education, we have a system in place to help immigrants learn to speak English and to help other students gain basic literacy skills and earn high school credentials.

Here's the catch: the ABE system has much more limited options for students who have a high school credential but still need their basic skills upgraded—these are the 667,000 workers we describe as the New Literacy Challenge. Rather than create a new sequence of ABE classes, which would be needed to systemically address the New Literacy Challenge, we recommend that ABE retain its current focus on meeting the Language and Education Credential Challenges (with redoubled effort, to be sure).

For the 667,000 workers who have a high school credential but who lack the necessary basic skills (Challenge #3), we propose that a new approach be adopted, an approach that requires community colleges to partner with employers to expand developmental education programs. Currently there is no coherent system in place to address the New Literacy Challenge, but utilizing the community colleges allows us to draw upon an existing system to achieve a new goal. As it stands now, these workers, on their own initiative, might seek out help from job training programs, community colleges, or ABE programs. Through workplace education programs, employers sometimes offer basic skills instruction to their employees. Unfortunately, we have no way of knowing how many workers with high school credentials receive help upgrading their basic skills. But again, what we do know is that as many as 1 out of 5 workers (667,000 out of 3.2 million in the state's labor force) need help. As we have surveyed the landscape of potential ways to address this challenge, we have determined that developmental education, if expanded carefully through a system of community college-employer partnerships, gives the best odds of success in making a real difference over the long run.

In this chapter we first discuss our recommendations to strengthen the existing ABE system administered by the Department of Education. It is important not to diminish the size of the challenges facing ABE or the vital importance of the basic literacy, GED, and ESOL classes being provided. The combined total of 195,000 immigrants who have limited English-speaking abilities (Challenge #1) and the 280,000 adults lacking a high school diploma (Challenge #2) adds up to almost half a million working-age adults (475,000). That means that the ABE system, which currently provides 25,000 class seats annually, is serving less than six percent of those who the research suggests could benefit from instruction. Clearly, there is much work to be done to strengthen and expand the capacity of the ABE system under the Department of Education.

While there are important ways that the existing ABE system can be improved, we are fortunate that a system is already in place to address the Language and Education Credential Challenges. The same is not true with respect to the New Literacy Challenge, making development of policy recommendations a challenging endeavor. Nevertheless, we believe we have developed a set of concrete proposals that address the spectrum of issues identified in this report. There are four general themes to the recommendations that follow: 1) Increasing Access, 2) Improving Quality, 3) Ensuring Accountability, and 4) Better Integrating Adult Basic Education and Job Training. In each case, broad policy goals are followed by more specific recommendations.

Meet the Language and Education Credential Challenges by Expanding and Improving the Adult Basic Education (ABE) System under the Massachusetts Department of Education

Eliminate the Waiting Lists by Fiscal Year 2003

Rationale:

In the last decade, the growth of the labor force in the Commonwealth has been essentially nonexistent. In the 1990s, the labor force in Massachusetts grew at a rate of only one-and-one-half percent. Indeed, Massachusetts ranked forty-seventh out of the fifty states in its rate of labor force growth in the 1990s. At the same time, thousands of adults who seek adult basic educa-

tion instruction remain on waiting lists. The wait in some areas of the state can be more than one year.

The Legislature should expand state funding to the Department of Education for adult basic education so that everyone who wants to improve their basic skills, learn to speak English, or study for the GED test can obtain help within a reasonable amount of time. As it stands now, waiting lists are excessive, and it is unreasonable to demand that potential students wait months for an opportunity to enroll. The Department should develop a comprehensive waiting list remediation strategy with the explicit goal of reducing the current waiting list size and duration to nominal levels by Fiscal Year 2003. In an emergency supplemental budget submission to the Governor and Legislature, the Department should submit an appropriation request sufficient to meet this objective. Given the history of annual funding increases for ABE supported by the Governor and Legislature over the past several years, there is every reason to believe that consecutive increases over the next two fiscal years, in the range of $8 million per year, are fiscally viable. At the current cost per student, an additional $16 million would support as many as 10,000 new class seats, which is the approximate size of the waiting list at this time.

No other aspect of state or local public education operates with demand so far outpacing supply.

It is worth noting that no other aspect of state or local public education operates with demand so far outpacing supply. The state's K-12 public schools do not—indeed cannot—deny students access. And the state's public higher education system—from UMass to state and community colleges—does not turn away qualified students. Neither should the ABE program. If a person is willing to come to class and put in the real work necessary, then the state should make every effort to ensure there is a seat available for that person and that the ABE programs deliver quality instruction.

Past experience indicates that the number of people who will come to the door for ABE classes may actually increase further as word gets out that there is additional available space. We have not ventured a dynamic estimate of the waiting list problem based on a further spike in demand, so we do not know how many people will come to the door if the state makes an additional funding commitment to support more class seats. That being said, it is critical to recognize that strong demand is ultimately evidence that the clients of the system believe their personal time and energy is being well spent, and that they are getting tangible benefits from enrolling in ABE classes. If waiting lists persist despite new efforts to remediate them then—at least on one level—it is a problem worth having. Over time, more may need to be done, but it is also to acknowledge that public dollars are being wisely spent.

Add Intensive GED Classes

Rationale:

Based on our statistical analysis of pre-GED and GED classes, we find that fewer hours if offered intensively should lead to better outcomes than classes spread out over a long period of time. For this specific subset of students, this finding has considerable policy implications for where and how public and private funding is directed toward GED providers.

Consider that a student who receives a total of 100 hours of instruction at 12 hours per week has the same probability of earning a high school credential as a student who receives a total of 225 hours of instruction at 6 hours per week. In both cases, about 1 in 3 students will earn a high school credential. Yet the second student requires more than twice as many hours to have the same likelihood of earning a high school credential. The intensive class will take about two months of instruction—the length of a summer school semester—compared to the less-intensive class, which will take about nine months—the length of an entire academic year. Moreover, given that the average number of hours of instruction that students receive is less than 100, it is not likely the second student will stay in class long enough to get the same benefit.

Because intensive classes are likely to require fewer hours overall, a greater emphasis on intensive classes is likely to be more cost-effective. In 1999, the average cost per student-hour was $14.69. An intensive 100-hour class would cost $1,469 per student plus certain fixed costs. In contrast, the way GED classes are often being taught today costs $3,300. (This assumes six hours per week for 225 hours.). While additional analysis would be useful, it is reasonable to argue that, given the evidence already accumulated, intensive classes are both a smart investment and a better way to teach many (but perhaps not all) of the students in need of GED instruction.

At the same time, it is important to be clear

about the limitations of intensive GED instruction. MassINC's research is a first step, and it looks only at the probability of earning a high school credential. It does not consider what learning gains students achieve or what test scores students receive. Recent research suggests that a person's GED score influences future earnings, and those with higher GED scores are likely to earn more. If the ABE system adds intensive GED courses, as we strongly believe it should, it should also start monitoring the GED scores of students to determine if there is a difference in scores depending on the form of instruction students receive.

While we recognize a high school credential by itself is not a sufficient indication of a worker's readiness for today's economy, it is vital not to lose sight of the very real income gain that comes merely from obtaining a high school equivalency credential. Households headed by a worker with a high school credential earn about 50 percent more than households headed by a high school dropout. This potential for a 50 percent income gain is why we believe that helping large numbers of workers earn a high school credential is an extremely worthy goal. We agree with those who would argue that students who pass the GED ought to continue their instruction until their basic skills are at least at NALS Level 3. We also agree that there are no quick, painless short-cuts to genuine skill-building. However, helping more dropouts earn this critical credential through intensive GED classes has the potential to boost incomes for thousands of working families—a distinct benefit in its own right.

The focus on intensity also has major implications for the philanthropic community's involvement in adult basic education. There is now an excellent opportunity for foundations and other private organizations (which also historically fund a considerable amount of adult basic education instruction) to fund several demonstration projects so that we can better understand the effects of intensive instruction for different populations and services.

Target Dropouts with Tenth-Grade Skills

The state should target for recruitment and enrollment in GED classes existing high school dropouts whose skills are at or above the tenth-grade level. These students, who account for the majority of the dropout population, are very close to being able to earn a high school credential. The effort to identify them and then place them in an intensive GED class should have a significant payoff and greatly reduce the number of adult workers in the state without a high school equivalency. At an approximate cost of an additional $14.6 million plus additional outreach and marketing costs, the state should target 100,000 high school dropouts for intensive instruction over the next five years.

Offer Intensive GED Classes at the Workplace

There is no substitute for the proactive involvement of the state's business community in promoting GED instruction for employees. The state's employer organizations that represent both small and large companies should develop the capacity to advise and assist their member companies on the topic of intensive GED instruction for employees. While in practice, the approach will take a fair amount of effort, the outline of what needs to be done is straightforward: Employers (again, both small and large, individually or in consortia) need to begin identifying their workers who lack a high school credential and then offering on-site intensive GED classes, preferably with half of the hours as an in-kind benefit. At the end of the three-month period, many employees would likely pass the GED exam. Both companies and workers would reap great benefits from a relatively modest investment of time and resources.

Use Intensive GED Classes to Help Prepare for the Expected Increase in Dropouts Resulting from K-12 Education Reform

This finding has important implications for the K-12 public education system as well. The state is currently gearing up to create a safety net for a large number of students—perhaps as many as 25,000—who are expected to fail the MCAS exams in 2003 and thereby fail to qualify for a high school diploma. Intensive GED classes may offer an effective, albeit not ideal, short-term alternative to a high school diploma.

Increase the Number of Hours Students Learn through Increased Use of Technology as well as through an Expanded Offering of Weekend Classes

Rationale:

We know adult basic education works, and the more time students spend learning, the better. As students spend more time in class, a greater number improve their basic skills. But we also clearly need to focus on

finding ways that enable them to spend more hours outside the traditional classroom setting where they can learn on their own in a way that is convenient for them.

Increase the Use of Technology and Distance Learning

Because of all their other responsibilities, the number of hours that workers can spend in the classroom will always be limited. The Department of Education has begun experimenting with ways to use technology and distance learning to overcome this limitation. The Department should be applauded for this effort and continue expanding these programs because both technology and distance learning offer practical ways to increase the number of hours students can spend learning—both in and out of the classroom.

In southeastern Massachusetts...not a single Saturday ESOL class is offered, despite the region's very large immigrant population.

Philanthropic foundations that are concerned with adult literacy should also consider funding an evaluation project in order to learn the most from the current Distance Learning Project in Massachusetts as well as distance learning efforts in other states and help bring these efforts to scale.

Expand Weekend ABE Classes

Classes should be convenient for students. While almost 7,000 students in 1999 indicated that classes on Saturday would be convenient for them, at the time of this research, there were currently only 25 classes in the entire state held on Saturday. This situation is simply unacceptable.

A particularly glaring deficiency exists in southeastern Massachusetts where there is not a single Saturday ESOL class offered, despite the region's very large immigrant population. It is clear that the number of classes offered on Saturday should be immediately increased. Students across all regions of the state should be able to take basic skills and ESOL classes on Saturday if such classes are more convenient for them. In addition, select providers should offer classes on Sunday to determine if Sunday would also be convenient for students. To the extent that available classroom space is a barrier to offering weekend classes, ABE programs should partner with local schools that are likely to have available classroom space on the weekends.

Do More to Ensure Students Stay in Class for More Hours and Do Not Drop Out within a Month's Time

Rationale:

As students stay in class longer, they are likely to learn more. Still, many students attend classes for only a short time. Almost 1 in 5 students drop out after a month or approximately 25 hours of instruction. A month is not long enough to reap these benefits. About three-quarters of students who receive a minimum of 150 hours of instruction achieve learning gains. We should aim to keep students in class for 150 hours. Currently, only one in five (21 percent) of students receive at least 150 hours of instruction. The Department should set as a first goal that 1 in 3 students receive a minimum of 150 hours of instruction. While at the end of the day, no one can help those who decide they are not ready for ABE classes or are unable to put in the necessary hard work, there are ways that the ABE system can help address this issue.

ABE programs and the Department of Education must make a greater effort to help students remain in class and to determine why students leave classes. The Department should also set as an explicit policy goal a reduction in the percentage of students unenrolling after 25 hours of instruction (currently 19 percent).

While students typically have many obstacles to attending class (e.g. child care, transportation, family obligations), previous research suggests that these obstacles can also be used as excuses to conceal the real reasons for dropping out. The Department should conduct a follow-up analysis with a sample of students to find out why students leave programs.

Improve Teacher Quality, Increase the Number of Full-Time Teachers, and Recruit New Teachers

Rationale:

Studies show that teacher quality and faculty stability are important factors in program quality. Currently, low pay and a lack of benefits contribute to the high turnover rate of instructors. Almost three-quarters of the teaching corps have been in the system for less than three years, and most teachers work part-time. We cannot expect a high-quality teaching staff unless we create incentives for teachers to commit to a long-term career in adult basic education.

Increase Teacher Salaries and Benefits

Increased salaries with benefits are necessary to create a highly skilled teaching staff and encourage a long-term commitment to the profession. We must also increase the number of full-time teachers. We recommend that the Department of Education set a goal that 50 percent of all teachers be full-time by Fiscal Year 2004 and then gradually continue to increase the percentage in the following years. This investment is a necessary part of creating a solid infrastructure.

Recruit Retiring K-12 Public School Teachers

The adult basic education system faces the same problem as the K-12 system in recruiting new teachers. The demand for high quality teachers is much greater than the supply. The adult basic education system, however, has one advantage over the K-12 system. Although adult basic education should, as stated above, increase the number of full-time teachers, there is still an important role within the ABE system for part-time teachers. The ABE system requires flexibility, which part-time teachers help to provide.

A large number of K-12 public school teachers may be retiring in the next few years due to an early retirement incentive package recently enacted by the Legislature. This package inadvertently creates a great opportunity for the adult basic education system. Many of these retiring public school teachers might very well find part-time employment in the ABE system attractive. These retiring teachers should be identified and aggressively recruited by the Department of Education. As veteran teachers, they would be of tremendous benefit to the ABE system.

Many of these retiring K-12 public school teachers might very well find part-time employment in the ABE system attractive.

Explore a New Funding Model for Adult Basic Education

Rationale:

Adult basic education stands alone among the state's other educational systems in the way it is funded. Rather than state funding going directly to long-standing institutions with largely permanent staffs and established physical infrastructures (buildings, campuses, etc.), funds are distributed largely to community-based private providers. These providers are responsible for hiring instructors on a class-by-class basis and for arranging the physical space where the class is held (renting community centers, securing donated office space, etc.).

The virtue of this system for ABE is that providers must competitively bid to secure state contracts, and this creates both incentives to demonstrate program effectiveness and a diversity of providers. The growing disadvantage of this "soft funded" system is that it sacrifices stability and inhibits the establishment of a more permanent, more institution-based way of delivering instruction. Each year the way ABE services are delivered to a particular community changes, depending on the level of overall state funding, the conduct of the DOE-managed bid process, the financial health of various community-based organizations, and a range of other variables.

This creates a fragile system characterized by an environment of uncertainty. It also decreases the incentives for long-term investments and even long-term planning. It is time to explore ways that adult basic education becomes part of the state's permanent educational system. The move from a "soft funding" approach to a "hard funded" system may take several years, and it is unclear what form it should take, but a gradual introduction of "hard funding" is an extremely worthwhile goal for the Department of Education to pursue.

Logic suggests that the introduction of a "hard funding" approach begins where the system has already shown that it provides certain kinds of instruction well. For instance, most beginning ESOL students acquire English language skills through ESOL classes. Long-standing ESOL programs that are known to be successful should be switched over to a hard-funding model so they can function more as permanent institutions that offer stability to their staff and students.

One of the most vexing problems facing providers is how to obtain permanent or long-term physical space. The state has been successful in the past in using its own quasi-public financing institutions, such as MassDevelopment or the Mass. Health and Educational Facilities Authority (HEFA), to provide capital for long-term leases or building purchases for charter schools. The same approach may make sense as well for local community-based ABE providers who need assistance in financing their own physical infrastructures. In the meantime, ABE providers should partner with local public schools, which often have classroom

space available in the evenings and on the weekends.

"Soft funding" should remain the appropriate way to launch new programs. "Soft funding" should also be used to fund experimental programs that address the needs of students who are not well served by the system. For instance, this could include students who have passed the GED but do not have the basic skills needed to succeed in post-secondary education and training. As these programs demonstrate their success and value, they should also be moved to "hard funding."

Increase Accountability of the ABE System

Rationale:

At the same time that the state considers increasing its investment in the adult basic education system, it should hold the ABE system more accountable. To do so, the Department of Education must improve the quality, stop collecting certain data, and collect new types of data. There are a variety of ways to accomplish this. Below are some concrete suggestions.

Pay for a State Sample of NALS 2002

We recommend that the Commonwealth participate in the next National Adult Literacy Survey (NALS), scheduled for 2002. The Commonwealth declined to participate in the 1992 NALS estimate which resulted in a poorer level of information about the New Literacy Challenge in Massachusetts. Given the Commonwealth's difficult fiscal circumstances in 1992, the failure to participate in NALS was understandable, if somewhat short-sighted. The expected cost of state participation in the upcoming NALS 2002 is $750,000—a substantial amount to be sure, but well within the state's current fiscal capacity.

The information resulting from NALS 2002 is essential to give us an even more accurate estimate of the population in need in the state. Without NALS 2002 participation, the state will be "flying blind" as it attempts to tackle the New Literacy Challenge over the long-term. Therefore, we recommend the Governor include an appropriation request for $750,000 in the Fiscal Year 2002 Budget Recommendation and that the Legislature act on it favorably.

Improve Quality of Program-Level Data and Standardize Assessments

ABE programs currently conduct an initial and exit assessment of their students. These assessments are supposed to be based on standardized tests or any of the more than 50 other assessment methods that the Department of Education has approved. Programs are expected to indicate which of these methods they use and provide the date of assessment. When we reviewed the 1998 data, we found that assessment dates and methods related to entry and exit levels were lacking for the majority of students. This lack of information limits our confidence in the accuracy of the data. The Department of Education must work more closely with programs to ensure accurate data, and should sanction providers who fail to meet the Department's data requirements. At the same time, the Department should reduce the number of acceptable assessments (50 is an exceedingly high number) and move toward standardizing the methods of assessments. This is all consistent with WIA where the use of standardized assessments is an expectation.

Collect Social Security Numbers of Participants

We strongly believe the adult basic education system should collect students' social security numbers in order to integrate ABE data with information from the different state agencies. This would allow us to know what happens to participants over time in the labor market. In the absence of hard data about the future earnings of ABE participants, it is impossible to say definitely whether state monies are being targeted toward the most effective ABE providers. To be sure, economic gains are only one benefit of ABE instruction. But we will never know to what extent ABE results in meaningful gains for workers until we examine the future income growth of those workers.

We recognize that our recommended approach raises real privacy issues, and there should be alternatives for those who do not want to provide this information or do not have social security numbers. However, we believe that existing concerns can be addressed with proper safeguards.

The chief obstacle is not technical but political. What is most needed is coordination among the respective state agencies involved in the collection and analysis of wage data. The leadership of the Governor's office in facilitating dialogue among executive branch agencies will be instrumental. In particular, the Department of Labor and Workforce Development, the Department of Education, the Division of Employment and Training, and the Department of Revenue must continue and expand their initial efforts to share information while respecting their statutory missions.

Conduct Future Research into the Effectiveness of Different Programs

Whether a student is likely to earn a high school credential is influenced by the number of hours of instruction, the student's background characteristics, and the program through which that student attends classes. While we know the site is important, we don't know exactly what matters about a given site, and we recommend this as a topic of future study. Qualitative studies might be instructive in trying to make sense of this. As funders of ABE programs, local and regional foundations should fund evaluation and qualitative research to help understand what makes a site effective.

Establish a Longitudinal Data Set

When the SMARTT system is fully implemented, longitudinal data (i.e. data about individuals over a period of time) should be available. We want to add our voice to the group of supporters of the importance of collecting longitudinal data, so that we can track participants over time on a variety of measures. As a way to cut costs, the Department of Education should consider collecting longitudinal information on a subset of ABE participants. The Department could then include qualitative data in addition to the quantitative measures. If the Department pursues this option, it is critical that the participants are randomly selected, and there must also be a sufficient number of participants to be able to draw general conclusions from the findings. Again, this would be a great opportunity for foundations and other private organizations to take a leading role.

Meet the New Literacy Challenge by Expanding Developmental Education through Community College-Employer Partnerships

Expand Developmental Education

Rationale:

We have identified 667,000 workers who clearly fail to meet the basic workplace skill requirements (NALS Level 3 or higher) called for by the National Governors' Association and other labor market experts. We believe the quickest, most cost-effective public and private response to this challenge is to expand the activities taking place as part of the "developmental education" initiatives at the state's fifteen public community colleges.

Currently, community colleges offer what is called "developmental education" instruction. Although developmental education can also be used to describe college preparatory courses, the developmental education to which we refer is focused on skill-building, and the intention is to help workers gain skills, not to help students gain the skills necessary to enroll at community colleges.

Community colleges offer developmental education instruction in collaboration with local companies to upgrade the skills of workers at those companies. Developmental classes are typically located at the workplace and are privately funded by businesses. In addition to paying for the courses, the employers' participation is critical to help identify workers who are unlikely to perceive themselves as needing help. Even if individual workers know they need assistance, they are not likely to know how or where to get the right type of help. The employers provide an important bridge between the workers and the basic skills instruction through developmental education initiatives run by community colleges.

There are several other advantages to focusing on the developmental education activities of community colleges as a way to meet the challenge of poorly skilled workers. First, the geographical distribution of the state's fifteen public community colleges (and their numerous satellite campuses) enables them to reach companies across the state. Second, because the state has already made considerable investments in the physical plant and personnel of these colleges, there is no need to build a system from scratch. Rather, we will be able to utilize an existing system for a new goal. It may be necessary to re-deploy existing community college resources and provide additional resources, but the basic tools to serve the state's most poorly skilled workers are already in place. Third, because campuses are already doing this type of work on a modest scale, they have the advantage of having established relationships with employers as well as some accumulated expertise.

Currently, community colleges are not doing enough, and their willingness to engage in this type of work is uneven across campuses. Increased leadership by college presidents and their trustees is essential. Rather than remaining an activity tangential to the primary mission of community colleges, we believe that developmental education for workers at local companies who need to upgrade their skills (and not nec-

essarily with the goal of attaining a higher education degree) should be formally established as one of the two or three essential missions of every community college.

Build on Current Efforts to Expand Developmental Education

Developmental education should be expanded through aggressive outreach and marketing, as these programs offer the most promising way to meet the New Literacy Challenge. We believe this should be done through public-private partnerships. In July 2000, the Legislature established two new programs: it appropriated $2.9 million to establish and implement a new Community College Developmental Educational Program, and it appropriated another $2.1 million for a new Community College Workforce Training Incentive Program. These programs provide a strong incentive for community colleges to expand their relationships with local employers. It is imperative to build on these efforts.

Establish a Basic Skills Training Tax Credit

To encourage companies and help share the cost of enrolling their employees in developmental education classes, the state should establish a Basic Skills Training Tax Credit. The Tax Credit would allow companies to deduct 50 percent of the cost of adult basic education or developmental education provided to their employees. With the average cost of a 100-hour course at $1,469 per student, the tax credit available per enrolled employee would be $735 (or 50 percent of the cost). We assume that this credit will benefit about 30,000 employees for an overall annual cost of $22 million.

While the above estimate suggests the general affordability and feasibility of a Basic Skills Training Tax Credit, more sophisticated revenue-loss analyses should be undertaken by state policy-makers. The potential for an incentive crafted to disproportionately benefit small- and medium-sized companies (where the need is greatest) ought to be explored. However, what is certain is that adopting a tax credit of this type could greatly encourage companies to invest in their workforces and ultimately enhance the competitiveness of the Massachusetts economy.

Link Basic Skills Instruction to the Workplace

Rationale:

We know that, given the booming economy and negligible unemployment rate, the majority of those who need their skills upgraded are already employed. Classes at the workplace are clearly more convenient for them. Employers also benefit not only by having better-skilled workers, but also by not having to rearrange schedules to accommodate the travel needs of their employees. Workplace-based instruction is also often tailored to the practical needs of employees, which can be more difficult to address in a traditional classroom setting. These programs bring workers closer together and enable them to work better as a team. Perhaps not surprisingly, research suggests that there is a substantial productivity payoff to workplace literacy programs.

Build on Existing Successes and Engage in More Aggressive Outreach to Prospective Employer Partners

There are precedents for sound policies that encourage employers to share the burden of providing instruction at the workplace. We must build on the considerable successes that already exist among employers, employees, providers, and funders (both public and private). A closer look at one innovative funding approach is instructive: Under existing program regulations, companies that receive assistance through the Department of Education's Workplace Education initiative (part of ABE) must provide salary for at least half of the time in class as an in-kind benefit to employees. This effectively doubles the time in class for workers.

While there is a legitimate concern that the instruction be broadly based and not be narrowly defined job training, the overwhelming benefits of workplace education programs clearly justify their expansion. Such an expansion requires much greater leadership and involvement of a number of parties. First, the Department of Education should expand its workplace offerings by doing more aggressive outreach to prospective employer partners. Second, business organizations must work cooperatively with the Department and with other providers to educate their member companies and promote the benefits of workplace education. Third, the private philanthropic community should reform their grant-making practices to create new incentives for more community-based providers to partner with private businesses.

Direct Funds in the State's Workforce Training Fund (WTF) toward Basic Skills Instruction

Given the size and urgency of the basic skills problem statewide, the monies that employers contribute annu-

ally to the state's Workforce Training Fund (WTF) could be allocated more effectively by devoting a larger portion explicitly toward basic skills instruction. Currently, the fund only allocates about ten percent of its funds for basic skills instruction. This amounts to a marginal amount of funding for what is a major labor force challenge. For this reason, we recommend that the WTF dedicate one-third of its grants to basic skills instruction. For example, if the Workforce Training Fund were to adopt this policy and dedicate the requisite $6 million this year to basic skills instruction, an additional 3,600 workers in the state would receive assistance, assuming the current ABE average cost per student. In fact, the actual number would likely be even higher, because programs offered at the workplace typically cost less than classes offered off-site.

The majority of those who need their skills upgraded are already employed.

Integrate Adult Basic Education and Job Training

Rationale:

In Massachusetts, job training and adult basic education are run separately and are governed by different agencies with little institutional linkage between them. The two systems serve the same people, but they rarely work together. We currently forfeit the opportunity to make the most of our training and adult basic education systems because of this lack of linkage. Basic skills instruction, job training, and increased educational opportunities are the key to providing the skilled workers that the state's economy demands.

Many people who show up for job training have limited basic skills. Without the basic skills instruction, their job training options are severely constrained since many training programs have a minimum skills requirements for participation. Yet they are rarely referred to the ABE system, which could help them acquire basic skills. This referral should be automatic.

At the same time, the adult basic education system is also not linked well enough to job training programs. Upon completion of basic skills classes, participants must then be pointed toward job development, placement activities, and other forms of training that are likely to result in earning higher wages. Basic skills classes are effective, but they should be viewed as the first step in upgrading people's skills. According to the Department of Education's records, this rarely happens. ABE programs must take a more active role in referring students to training programs.

Create Incentives for Improved Coordination between the ABE System and Workforce Development Agencies

The state should offer incentives to help overcome some of the obstacles to interagency coordination. For the first year, the state should target $1 million to programs or pilot projects that combine adult education, training, job placement, post-hiring services, etc. These projects would be designed and implemented jointly by different agencies, such as the Mass. Department of Education and the Corporation for Business, Work, and Learning. Over time, with interagency coordination as an explicit criterion, funding for such projects should increase.

Demand Greater Federal Attention to Basic Skills Issues

Rationale:

State funds currently account for three-quarters of the publicly financed adult basic education spending. The state has a record of sizable annual funding increases of which it can be proud. Over the last six years, state funding for ABE increased by about $26 million. In contrast, during this same time period, federal funding for adult basic education in Massachusetts increased by less than $3 million. While funding is only one measure of commitment to an issue, it is clear that increased federal leadership—both at a fiscal and a policy level—is urgently needed.

Support a Federal Job Training Tax Credit

The federal government needs to encourage companies to invest in training, especially in basic skills. The Progressive Policy Institute is calling for a 30 percent federal tax credit for company investments in remedial education, literacy training, and English as a Second Language. We agree, and call on the Massachusetts Congressional delegation to work to enact this important proposal.

Find Creative Ways to Implement WIA

The Workforce Investment Act also provides the Commonwealth with an opportunity to find creative ways to use federal resources to enhance our adult basic education, and we should seize the opportunity.

It encourages a more holistic approach (redefining objectives, combining existing funding streams in new ways, etc.) that aims for a "seamless" system for its customers.

We agree with this approach. It is a mistake of the first order to continue to treat adult basic education as a narrow "social service" or "education" effort that is distinct from a broad workforce development agenda. Indeed, in order even to participate in most traditional job training, workers must first have a set of basic skills. The state should use the flexibility provided under WIA to develop and implement a workforce strategy that dismantles moribund organizational and programmatic structures that no longer fit with changing realities.

It is a mistake...to continue to treat adult basic education as a narrow "social service" or "education" effort that is distinct from a broad workforce development agenda.

Improve "Customer" Choice through New Innovative Measures

Rationale:

It is only common sense that opportunities for ABE instruction ought to be widely known to potential students—the customers of the system. To borrow a term, ABE should be provided in a way that is "user-friendly," with information about a variety of programs—location, hours, offerings, available space—easily accessible. Potential students ought not to have to struggle just to identify enrollment opportunities when the work of improving their skills is hard enough. Current efforts to provide information through one-stop Career Centers tend to fall short of the mark (see Chapter 7), and not enough energy is spent working creatively to make sure potential students know all their options.

For example, the National Institute for Literacy (NIFL) is currently working on a Web-based database that lists all available programs in the nation. We think the Commonwealth should immediately do the same in our state. There should be an easily accessible Web-based list of all programs - both those administered by the Department of Education and those run by private or other public entities.

Concluding Thoughts

Our policy recommendations have stressed the need to: increase access to adult education opportunities, improve the quality of instruction, ensure accountability, and better integrate adult basic education and job training. The recommendations have also emphasized the need to invest gradually in a targeted way as well as the need to share the costs among the public (state and federal), private, and philanthropic sectors. These recommendations are not the only steps necessary to build an integrated adult education initiative, but they represent a strong start.

Finally, it is important to remember that the Commonwealth really does not have the luxury of deciding whether to meet the twenty-first century skills challenge. The long-term economic health of our state depends on our willingness to invest wisely in a stronger and more fully integrated adult education initiative. If workers are willing to put in the hard work to upgrade their skills, then we owe it to them and to ourselves to rise to the challenge of assisting them.

APPENDIX A Background Information on the ABE System

THIS APPENDIX OFFERS background information on adult basic education in Massachusetts. It explains the data collection system of the Adult and Community Learning Services (ACLS) unit. It also describes the System for Adult Basic Education Support (SABES), which provides technical assistance and training to ABE programs. Finally, it describes some of the other institutions, such as volunteer services, that provide important support to the system. Before describing the roles of these different entities, a brief history of adult basic education in Massachusetts, including an overview of the significant federal and state laws, will help explain the evolution of the ABE system.

A Brief History of Adult Basic Education in Massachusetts

There have been four distinct periods in the history of adult basic education in Massachusetts. The foundation for the current system was laid in the nineteenth and early twentieth centuries, and Massachusetts was one of the first states to recognize the importance of offering publicly supported learning opportunities to adults. There were no significant changes in the provision of adult education from the 1920s to the 1960s.

The second period was launched with the passing of federal legislation: the Adult Education Act of 1966. This act authorized funding of programs specifically targeted toward adults seeking to acquire basic skills, English literacy, and high school equivalencies. The federal government's promotion of adult basic education helped launch the first state-funded study of the status and needs of adult education in November, 1967. This effort led to the creation of the Massachusetts Adult Education Planning Project (MAEPP), and this project quickly revealed the fragmentation existing in the provision of adult education. It identified eighty-three different state agencies scattered among different departments or reporting directly to the Governor that had some responsibility for adult education, and these state agencies knew little about programs that were not supported by federal or state funds. Despite this knowledge, little changed in adult basic education in Massachusetts until the middle of the 1980s.

The third period, which began about fifteen years ago, is characterized by serious efforts to strengthen and coordinate adult basic education services across the state and to bring coherence to the complex system that evolved over the last century and a half. At the state level, 1982 marked the authorization of Massachusetts's first state appropriation for adult basic education, in the amount of $600,000. Three years later, a push by advocates was successful and the appropriation increased to $2,000,000. By 1987, resources doubled to $4,000,000.

At the federal level, agencies outside the Department of Education have become involved in supporting educational services for adults. In particular, the Department of Health and Human Services and the Department of Labor began supporting services that prepared adults for entry into job-training programs. Federal legislation in 1991 called the National Adult Literacy Act had no new appropriations but did amend the Adult Education Act (AEA) by setting up a number of new grant programs that shifted the funding focus. The new programs focused on efforts to target the least educated students, rather than students in GED preparation classes, who are the most advanced students in adult basic education.

The third phase began when the Bureau of Adult Education, working closely with practitioners, launched a substantial reorganization of the funding and programmatic foundation for adult basic education services in the early 1990s. The Bureau also established the System for Adult Basic Education Support (SABES) to provide technical assistance and training to build the capacity of the programs that provide instruction.

In 1993, the state's landmark Education Reform Act (ERA) best known for reform of the state's K-12 system also addressed the provision of adult basic education. Indeed, Chapter 69, Section 1H stipulated that the Department of Education, in coordination with other state agencies, should develop a comprehensive system, subject to appropriation, for the delivery of adult basic education and literacy services that would

lead to universal adult literacy and better employment opportunities.

The legislation expanded and clarified the scope of adult basic education programs by mandating the development of services for the following groups:

- Welfare recipients and other unemployed or marginally employed adults who need a foundation of basic skills
- Parents of young children who require skill development to move their families out of poverty and raise the educational aspirations of their children
- Immigrants, migrants and refugees needing English language and literacy development (especially at lower levels) for use at home and at work
- Young persons aged sixteen to twenty-four who have dropped out of school, with an emphasis on linking education with vocational training and supported work

The Education Reform Act further set forth objectives for the Department of Education with respect to adult basic education. These objectives included:

- Development of a full continuum of services that take an adult from the lowest level of literacy or English-language proficiency through high school completion leading to advanced education and training
- A network of trained, full-time adult literacy and English as a Second Language professional instructors, qualified to provide high quality effective services
- A strong documentation and evaluation capacity that will enable the state to determine what methods of instruction and what means of service delivery are most effective in educating adults
- Coordinated accountability mechanisms that simplify existing reporting and refunding processes

The amount has continued to increase since 1987, and in 1999, the state spent $26.6 million on adult basic education.

We are currently entering a new phase that will be defined by requirements of the Workforce Investment Act (WIA), a federal law enacted in 1998.[1] WIA consolidated over fifty employment, training, and literacy programs into three block grants to states to be used for adult education and family literacy, for disadvantaged youth, and for adult employment and training services.

In addition to its specific authorization of adult education services, WIA encourages the coordination of efforts across employment, training, and adult basic education programs. This coordination is fostered by "one-stop" career centers, or local centers in each region of the state through which adults can gain access to an array of job training, education, and employment services. WIA also replaces Regional Employment Boards (REBs) with local Workforce Investment Boards (WIBs). These boards are charged with oversight of workforce development activities in their local areas.

Furthermore, WIA establishes a comprehensive performance accountability system. The Mass. Department of Education must identify expected levels for its performance indicators to show student improvement and then negotiate an agreement with the U.S. Secretary of Education that sets these levels. The Department of Education must report annually to the Secretary of Education on its progress with respect to the performance measures, and this information will be made public, including comparisons with other states. The performance measures by which states will be assessed include:

- Demonstrated improvement in literacy skill levels in reading, writing and speaking in the English language, numeracy, problem-solving, English-language acquisition and other literacy skills
- Placement, retention, or completion of post-secondary education, training, unsubsidized employment, or career advancement
- Receipt of a high school diploma or its equivalent
- Other objective, quantifiable measures, as identified by the state agency and which can include input from local providers

WIA gives the state a great opportunity to better coordinate and improve the provision of adult education. We should not lose sight, however, of the fact that the state provides roughly four times the amount of money that the federal government offers for adult basic education. The Department of Education should take advantage of WIA, but at the same time it should also make certain that WIA supports a system

1 For a more thorough discussion of the Workforce Investment Act, John Donahue, Lisa Lynch, and Ralph Whitehead, Jr., *Opportunity Knocks: Training the Commonwealth's Workers for the New Economy* (Boston: MassINC, March, 2000).

that meets the state's needs. It should not allow the new federal legislation to dictate the state's agenda.

Adult and Community Learning Services (ACLS) Unit

The Mass. Department of Education administers the adult basic education program through its Adult and Community Learning Services (ACLS). The ACLS has about thirty-five professional staff members and is directed by Robert Bickerton, who was previously an ABE teacher and program director. The ACLS oversees a process of planning with service providers and advocates in the field, managing the field's relationships with the Administration and the Legislature. The main administrative functions of the ACLS are dispersing state and federal funds and collecting data about the system. Chapter 4 ("Funding for ABE") focuses on the funding of ABE. Here, we focus on the data system and SABES.

ACLS Data Collection System

Throughout the approximately thirty-five-year history of the formal discipline of adult basic education, program accountability and measurement of outcomes have been flagged as critical weaknesses.[2] The problems of measuring results come from 1) a lack of consensus on desired outcomes and 2) the difficulty in measuring the outcomes. Today there is no consensus in Massachusetts on how results ought to be measured, and serious concerns exist about the validity of existing assessment tools.

The United States Department of Education measures progress through standardized assessments —grade levels for adult literacy students and student performance levels for ESOL learners. Some practitioners disagree with this approach and argue for more appropriate measures tied to curriculum objectives or adult student goals. In addition, practitioners disagree on how outcomes ought to be measured. While some have advocated for either standardized norm–referenced or criterion-referenced tests, others have promoted authentic assessment processes that evaluate examples of student work.

Authentic assessments are useful for helping students and teachers measure progress, but they can not be used for large-scale accountability systems. Better tests could be developed, but this is an expensive task —a task that is appropriate for the federal government, not the state of Massachusetts.

Even if better tests were available, there are other measurement challenges. Ideally, progress must be measured with both an entry and an exit test. Because adult students' attendance is voluntary, it is also unpredictable. Indeed, students often stop attending class with no notice, and therefore "disappear" before they can be tested for a second time.

At the federal level, discussions are underway that focus on articulating 1) the outcomes of the service-delivery system and 2) the specifications and design of a national management-information system. Several states, including Massachusetts, have not waited for this effort and have designed and implemented their own management-information systems.

One national initiative, Equipped for the Future (EFF), which is part of the National Institute for Literacy (NIFL), is aimed at improving the quality and outcomes of adult literacy programs. Through a grassroots process, EFF and its partners have engaged participants and stakeholders in the adult literacy system to build a consensus on customer needs and goals. From this consensus, EFF is developing, refining, and validating frameworks for content and performance standards.[3]

Another national effort that has emerged from the Workforce Investment Act is the National Reporting System for Adult Education (NRS). The goals of NRS are to establish a national accountability system for adult education programs that are federally funded. To do this, the project is working to identify measures for national reporting, including defining the measurements, establishing methods for data collection, developing software standards for reporting, and developing training materials. By using a common set of outcome measures, states will be able to correlate effective practices and programs with successful outcomes. This effort should help improve the quality of programs across the country.[4]

Massachusetts established the System for Managing Accountability and Results through Technology (SMARTT) as its management information system for adult basic education programs. The system was custom-designed for the ACLS, which manages and maintains it. SMARTT is a web-based application, and the database is kept in a central location at ACLS. Programs access the system from their sites to enter and update their records through the Web, and the database can be used by anyone who is authorized to access the system through a Web browser. SMARTT

2 See United States General Accounting Office, "Adult Education: Measuring Program Results Has Been Challenging," GAO/HEHS-95-153, September, 1995.

3 For more on Equipped for the Future, see http://www.nifl.gov.

4 For more on the National Reporting System, see http://www.air.org/nrs.

is a relational database that contains information about students, teachers, counselors, administrators, other paid and volunteer staff members, classes, volunteer tutorials, instructional sites, and organizations.

The SMARTT system, when fully implemented in 2001, will also include a waiting-list feature and a planning module to allow programs to manage their waiting lists and to enable ACLS to allocate resources according to need and demand. To date, programs have not had access to the information. For programs, this has been a source of frustration and also an obstacle to getting "buy-in" from the programs since they spend a lot of time providing the data but have not been able to gain any of the benefits from the database. SMARTT should serve as a longitudinal, publicly accessible database allowing a variety of users to query data sets for a broad range of purposes. One such purpose is facilitating customer choice. Potential students, for instance, would be able to locate and evaluate services in their community. Researchers would be able to conduct secondary analyses of program data. State officials and legislators would be able to examine SMARTT data for accountability purposes. Through SMARTT, ACLS intends to provide local directors and policy makers with a tool to better describe, analyze, plan, manage, evaluate, and improve ABE in the Commonwealth. While it will be a great tool to better understand the adult basic education services, SMARTT will not resolve all accountability issues and measurement challenges, though.

The use of social security number[5] as a unique identifier for learners would expand the capacity of the system. Social security numbers would allow ACLS to link SMARTT with other state databases. For instance, if this link is established, both more information and more accurate information about students who participate in adult education classes who obtain GEDs could be gained. Currently, the state has no way of knowing if a student in adult basic education obtains a GED after he or she has completed or left a GED class. The state only has information about the number of adult students who obtain their GEDs while they are enrolled in a literacy class, and only if they choose to tell the teacher. Clearly, this limitation underrepresents the number of GEDs obtained by adult participants.

Social security numbers would also allow ACLS to obtain accurate data on earnings and employment status from workforce development, unemployment, or other related public agencies that collect these data. Although some adult students might object to providing this information, some states, such as Illinois, have started using social security numbers to track students, and a recent study in Oregon found that ninety percent of adult students were willing to provide social security numbers. This could be sufficient for accountability purposes. If we want to measure the impact of adult basic education over time, we need a way to track students over time, and the social security number is the best way because of the ability to integrate information with other agencies.

We also need to integrate the data between agencies that serve the education needs of adults. SMARTT currently captures only data from programs that receive state and federal funds from ACLS. Other public funding agencies (for example, the Corporation for Business, Work, and Learning, the Department of Transitional Assistance, and Division of Employment and Training) do not use SMARTT. These systems need to be integrated. This is necessary to measure the impact of services and hold agencies accountable.

System for Adult Basic Education Support (SABES)

In 1990, the ACLS (then the Bureau of Adult Education) established the System for Adult Basic Education Support (SABES) to strengthen, expand, and develop the quality of adult basic education in the Commonwealth through a network of training and technical assistance. The creation of SABES was seen as a key element in the state's effort to strengthen services and forge them into a comprehensive and effective system. SABES was designed to provide program and staff development services, establish a clearinghouse of useful materials and sources of information, and initiate a program of research and development. Funding for the project came from combined federal and state resources. In its nearly ten years of operation, SABES has built a comprehensive system of program and staff development and a clearinghouse that provides information to practitioners, but little has been done with the research and development component.

SABES comprises five Regional Support Centers (RSC) at community colleges around the state. The community colleges include: Northern Essex Community College in Lawrence; Quinsigamond Community College in Worcester; Holyoke Community College; Bristol Community College in Fall River; and the Adult

5 During the development stage, programs opposed the use of a social security number as a required data element. They articulated concerns regarding the status of some immigrants who may not yet have social security numbers. They preferred not to inquire about any information (e.g., immigration status) that might prevent them from serving the learner. In response to this concern, the ACLS created a procedure to generate a unique identifier that would not require programs to supply social security numbers.

Literacy Resource Institute at Roxbury Community College/UMass-Boston. In addition to the five RSCs around the state, SABES has a Central Resource Center (CRC), located at World Education in Boston. World Education is a nonprofit organization with almost fifty years of experience in adult education. The CRC is responsible for providing overall coordination and leadership in staff and program development.

A full range of resources is available at each RSC. These include materials for lesson planning, curriculum development, program development, for training and for classroom research. In addition, the RSCs have a collection of publications on state-of-the-art literacy practices; a workplace education and family literacy database; adult literacy, GED, and ESOL curriculum development materials; practical and theoretical handbooks; audio-visual programs and computer software; and Internet resources.

For the practitioners who have come to use its services, SABES has been a welcome addition to the state's adult basic education system, but SABES staff members have identified several obstacles to a wider participation in their activities.[6] The first obstacle is time. Since most of the staff members are part-time, it is challenging for them to find time to commit to staff development. The ACLS funds time for staff development, but often that time is used at the annual statewide conference, which is two days long. Currently, programs are being asked to engage in many statewide initiatives. This has overwhelmed programs and staff members, and they are stretched very thin.

Most of the ABE workforce is part-time, and they are paid low salaries usually without benefits. As noted elsewhere, this leads to a high rate of turnover and little stability in the field. This is especially true in Boston. This instability in staff, in turn, drains SABES and the field as a whole. They are constantly training new staff in addition to trying to meet the needs of the more experienced staff. Almost all of this training occurs during the school year, since there is very little pre-service training.

Another obstacle is philosophical. SABES is perceived as having a participatory philosophy. This philosophy has various consequences for the ABE system and how SABES does its work. For example, SABES is committed to developing practitioner leadership and use current teachers, directors, and counselors as trainers whenever possible. The downside of this approach to training and development is that SABES is sometimes perceived as not relying enough on outside experts and as not having a strong enough theoretical or academic base for its training.

Other Supporting Institutions

The adult basic education system is supported by other institutions that provide important services that facilitate the delivery of adult basic education.

Volunteer Services

While most adult basic education services in the state are organized around classes, the work of volunteer tutors provides an important supplement to the hours that learners spend in classrooms, and some adults prefer to study with a tutor rather than join a class. Volunteer services in Massachusetts are provided through the ACLS-funded programs, Literacy Volunteers of Massachusetts, the Eastern Massachusetts Literacy Council, and independent church and community-based efforts.

The ACLS provides direct support for volunteer services through the Commonwealth Literacy Corps (CLC), which was founded in 1987. The CLC has recruited, trained, and placed over 10,000 volunteers in programs throughout the state. At present, ACLS estimates there are between 2,000 and 2,500 volunteers.

Library Literacy Services[7]

Some public libraries are involved in the coordination and delivery of literacy services in their communities. They provide outreach programs to people with low-level reading skills and also to those with limited English-speaking ability. Library-based literacy efforts include collections of books and curriculum for adult new readers, support services for the community, and one-on-one or small-group instruction at the library. Currently, twenty-six libraries offer literacy programs that serve approximately 2,500 people across the Commonwealth.

The Massachusetts Alliance for Adult Literacy

The Massachusetts Alliance for Adult Literacy was recently founded to involve ABE students and former students in issues around literacy and adult basic education instruction across the state. They work closely with practitioners, and their mission is as follows: "The Massachusetts Alliance for Adult Literacy (Mass AAL) is an organization of current and former adult basic education students who hope to advance the cause of

6 Based on an interview with Sally Waldron, the director of SABES.

7 Based on a conversation with Shelly Quezada, Consultant to the Unserved, Board of Library Commissioners.

literacy among adults in the state of Massachusetts. Mass AAL is committed to improving the lives of adults involved in literacy programs including ESOL and GED and to make them full functioning members of society. Mass AAL has been organized to give adults a voice in decision making by influencing adult basic education programs as well as taking charge of their own lives."

Massachusetts Coalition for Adult Education (MCAE)

The Massachusetts Coalition for Adult Education (MCAE) was formed in the early 1990s through the merging of two organizations: the Massachusetts Coalition for Adult Literacy, which worked to increase resources for adult basic education services, and the Massachusetts chapter of the American Association for Adult and Continuing Education (MACE), which focused on the professional development of adult educators.

The organization is well known for its annual conference, "Network," which provides an opportunity for networking among practitioners across the state as well as a forum for presenting and discussing research and policy developments in adult basic education. MCAE also supports ABE through advocacy. Volunteers from its board and membership are influential in advocating for adult basic education services by providing up-to-date information on what is happening in the field and what educators can do to help. Through this volunteer effort, MCAE has been effective in recent years in advocating for increased funding to support the effective implementation of adult basic education programs.

Massachusetts Association of Teachers of Speakers of Other Languages (MATSOL)

The Massachusetts Association of Teachers to Speakers of Other Languages (MATSOL) was launched in 1972 as an affiliate of the International Association, Teachers of English to Speakers of Other Languages (TESOL). Its membership of nearly 800 includes teachers and administrators working to provide ESOL services across the state in institutions in primary, secondary, and higher education, as well as adult and workplace education. MATSOL's mission is to improve the instruction of English to speakers of other languages, to foster the professional development of its members, and to act as a clearinghouse for information on developments in English as a Second Language and related educational fields.

The ABE Directors Council

The ABE Directors Council was formed in the early 1980s by a group of practitioners who were dissatisfied with the way that policymakers and bureaucrats were handling adult basic education issues. The Council functions as the group that represents practitioners with regard to policy issues. Specifically, the ABE Directors Council: 1) promotes linkages among all ABE and related providers at the state, regional and local levels 2) develops and implements strategies to address issues of concern among the ABE field 3) encourages the development of strategies to improve the overall status of the ABE profession and its employees, both full and part-time 4) continues to promote increased public awareness of ABE in Massachusetts and 5) examines, researches and provides timely information and advocacy on changes in ABE and adult education legislation.

APPENDIX B Education and Literacy Needs of the State's Elderly Population and the Young Adult Population

THE UNIVERSE OF NEED ESTIMATES displayed in Chapter 2 excluded the elderly and 16-24 year old high school and college students. We consider them briefly in this appendix.

The Elderly

While elderly residents' participation in ABE and ESOL programs has been quite limited in recent years, the demand for instruction may increase in the future as key segments of the elderly population increase in numbers as a consequence of the graying of the baby boom generation.[1] Between the year 2000 and 2010, the number of Massachusetts residents ages 65 to 69 is projected to increase from 204,800 to 250,400, an increase of nearly 46,000 or 22 percent.[2] The aging of the state's working-age population will place greater pressures on employers to make fuller and more efficient use of the elderly population.

TABLE B.1

Number of Massachusetts Residents 65 and Older with Limited Schooling or Literacy Proficiencies, 1998-99

Group in Need	Number
Elderly adults lacking a high school diploma or GED	222,000
Full-time elderly(1) workers with a Level 1 or 2 proficiency	9,000
Part-time elderly(1) workers with a Level 1 or 2 proficiency	14,000
Unemployed elderly(1) persons with a Level 1 or 2 proficiency	1,000
Elderly non-participants(1) with a Level 1 or 2 proficiency	227,000
Total	473,000

Note: (1) Our counts of the elderly in this category exclude those who lacked a high school diploma or a GED certificate.

Over the 1998-99 period, the number of elderly adults in Massachusetts with limited schooling or literacy proficiencies was estimated to be 473,000 (Table B.1). This total included 222,000 persons (65 and older) lacking a high school diploma or a GED certificate, 24,000 elderly labor force participants with Level 1 or 2 prose proficiencies, and 227,000 elderly residents not active in the labor force with only Level 1 or Level 2 proficiencies. Few of these elderly residents have enrolled in either DOE-funded adult basic education or JTPA Title II A or Title III employment and training programs throughout the entire state. Given longer life expectancy, coming growth in the absolute numbers of older residents, and the increasing literacy demands for full participation in today's society, an expanded set of ABE and ESOL classes for older residents may well be called for in the coming decade.

High School and College Students

Our universe of need estimates for ABE and ESOL programs also excluded all 16-24 year old high school and college students. Our estimates of the literacy proficiencies of the state's young adult student population suggest that approximately 146,000 students in 1998-1999 may have acquired only a Level 1 or 2 proficiency in literacy skills (Table B.2). High school students comprise a majority of this group, but many two-year college students also have weak proficiencies. This group of students with limited prose and quantitative proficiencies includes approximately 60,000 workers and unemployed youth, with the remaining 86,000 not active in the labor force. Stronger literacy proficiencies for this population group would clearly boost their high school graduation rates, their ability to pass the MCAS test, their college enrollment and completion rates, and their future employability and earnings potential.[3]

TABLE B.2

Number of 16-24 Year Old High School and College Students(1) in Massachusetts With Limited Literacy Proficiencies, by Labor Force Status, 1998-99

Labor Force Status	Number
Employed Full-Time	10,700
Employed Part-Time	45,200
Unemployed	4,300
Out of the Labor Force	86,000
Total	146,200

Note: (1) Estimates for college students include only those students who are not temporarily living in the state. Massachusetts college students whose families live outside the state are excluded from the CPS survey in Massachusetts.

1 For a review of key projected older worker demographic developments in Massachusetts over the coming decade, See The Massachusetts Blue Ribbon Commission on Older Workers, *Older Workers: An Essential Resource for Massachusetts*, Boston, 2000.

2 See Andrew Sum, Paul Suozzo, and Sheila Palma, *Trends in the Size and Demographic Composition of the Older Worker Population in Massachusetts: A Demographic Assessment*, Report Prepared for the Massachusetts Jobs Council, Blue Ribbon Commission on Older Workers, Boston, August 1997.

3 See Andrew Sum, Neeta Fogg, and Garth Mangum with Sheila Palma, *Confronting the Youth Demographic Challenge* (Baltimore: Sar Levitan Center for Social Policy Studies, Johns Hopkins University, 2000).

APPENDIX C Supplemental Statistical Information for Chapter 6

TABLE C.1

Parameter estimates, asymptotic standard errors, approximate p-values, and goodness-of-fit statistics for models selected from a taxonomy of fitted logistic regression models describing the probability that high school dropouts in Pre-ASE and ASE programs will receive a high school credential as a function of hours of instruction, controlling for age, race/ethnicity, socioeconomic status, entering ability, first language, intensity of instruction, and interactions between hours of instruction and participant background characteristics.

PREDICTOR	HIGH SCHOOL CREDENTIAL			
	Baseline Model No Predictors	Model with Hours Only	Model with Hours & Student Background	Model with Hours, Student Background, & Intensity of Instruction
Hours of Instruction				
LN Hours		0.2462***	0.3860*	0.3733*
		(0.0321)	(0.1565)	(0.1563)
Age				
Age			-0.0463**	-0.0451**
			(0.0158)	(0.0157)
Age*LN Hours			0.0075*	0.0074*
			(0.0036)	(0.0036)
Race/Ethnicity				
Black			-1.4487**	-1.4790**
			(0.4719)	(0.4707)
Hispanic			-1.7866***	-1.8055***
			(0.5158)	(0.5128)
American Indian			-0.4623	-0.4423
			(1.4904)	(1.4769)
Asian			0.4113	0.3695
			(1.1173)	(1.1170)
Black* LN Hours			0.1575	0.1626
			(0.1082)	(0.1079)
Hispanic* LN Hours			0.2539*	0.2562*
			(0.1161)	(0.1154)
American Indian* LN Hours			0.0152	0.0111
			(0.3549)	(0.3515)
Asian* LN Hours			-0.1546	-0.1485
			(0.2708)	(0.2705)
Socioeconomic Status				
Public Assistance			-1.4888***	-1.4743***
			(0.4417)	(0.4405)
Public Assistance* LN Hours			0.2606**	0.2515*
			(0.0984)	(0.0983)
Unemployed and Looking for Work			-0.3494***	-0.3816***
			(0.0913)	(0.0921)
Homemaker			0.3238*	0.3038*
			(0.1525)	(0.1529)
Retired and Not Looking for Work			0.1243	0.0910
			(0.3399)	(0.3425)
Unemployed and Not Looking for Work			-0.1973*	-0.2233*
			(0.0960)	(0.0964)
Entering Ability				
GLE 6 on Entry			-1.1677	-1.1100
			(0.8382)	(0.8327)
GLE 7 on Entry			0.6350	0.6436
			(0.9256)	(0.6583)
GLE 8 on Entry			-0.1054	0.0053
			(0.6254)	(0.6241)
GLE 9 on Entry			0.7982	0.8300
			(0.5526)	(0.5522)
GLE 10 on Entry			0.9467~	0.9852~
			(0.5486)	(0.5482)

GLE 11 on Entry			2.1061***	2.1257***
			(0.6002)	(0.5994)
GLE 6* LN Hours			-0.1584	-0.1717
			(0.1902)	(0.1892)
GLE 7* LN Hours			-0.4253**	-0.4301**
			(0.1593)	(0.1590)
GLE 8* LN Hours			-0.1622	-0.1879
			(0.1517)	(0.1515)
GLE 9* LN Hours			-0.2631~	-0.2728~
			(0.1372)	(0.1373)
GLE 10* LN Hours			-0.1982	-0.2047
			(0.1373)	(0.1373)
GLE 11* LN Hours			-0.4144**	-0.4171**
			(0.1528)	(0.1527)
First Language				
Spanish			-0.1441	-0.1508
			(0.2052)	(0.2051)
Portuguese			-0.5494**	-0.5642**
			(0.2032)	(0.2043)
Korean			-4.4139	-4.4031
			(6.5139)	(6.4925)
Haittian Creole			-0.0627	-0.0215
			(0.3126)	(0.3139)
Cantonese			-0.5146	-0.5388
			(0.8216)	(0.8205)
Mandarin			-1.2890	-1.2666
			(1.0990)	(1.1000)
Toisanese			-3.0105	-2.9678
			(22.2439)	(22.2439)
Russian			-4.6814	-4.6889
			(7.9366)	(7.9504)
Japanese			-3.8374	-3.7863
			(22.2453)	(22.2453)
Arabic			-1.2134	-1.1432
			(1.0490)	(1.0495)
French			-0.5585	-0.5442
			(0.4473)	(0.4471)
Vietnamese			-0.9231	-0.9374
			(0.8287)	(0.8266)
Cape Verdean			0.5442	0.5481
			(0.3917)	(0.3944)
Cambodian			1.8456**	1.8112**
			(0.6265)	(0.6273)
Other but not English			0.0034	0.0386
			(0.2788)	(0.2791)
Site Characteristics				
Intensity of Instruction Class Hours Per Week				0.0404**
				(0.0129)
Intercept	/	-2.5887***	-1.7813**	-2.0076**
		(0.1342)	(0.6371)	(0.6402)
Summary Statistics				
-2LL	5,900.985	5,839.355	5,171.110	5,161.414
Change in -2LL		61.630	668.245	9.696
Change in df Previous Model		1	43	1
% of Correct Predictions for Not Achieving a HS Credential				
(Cut off value=0.18)	/	64.67%	68.29%	68.31%
% of Correct Predictions for Achieving a HS Credential				
(Cut off value=0.18)	/	44.13%	68.99%	68.90%
% of Correct Predictions Overall				
(Cut off value=0.18)	/	61.26% %	68.40%	68.40%
N (Selected Cases)	6,561	6,561	6,561	6,561
% of Sample	99.08%	99.08%	99.08%	99.08%
Pseudo R-Square	/	0.010	0.124	0.136

~p<0.10 * p<0.5 ** p<0.01 *** p<0.001

TABLE C.2

Parameter estimates, asymptotic standard errors, approximate p-values, and goodness-of-fit statistics for models selected from a taxonomy of fitted logistic regression models describing the probability that unemployed ABE participants who are looking for work will find a job, as a function of hours of instruction, controlling for selected participant characteristics and educational achievement.

Predictors	Baseline Model	Model with Hours of Instruction Only	Model with Hours of Instruction and Participant Characteristics
Hours of Instruction			
LN Hours		0.2182**	0.1636*
		(0.0684)	(0.0710)
Socioeconomic Status			
Public Assistance Status			-0.2851~
			(0.1602)
Learning Gains			
Gains in Grade Level			0.1656***
			(0.0399)
Intercept		-3.2839***	-3.1800***
		(0.2918)	(0.2909)
Summary Statistics			
-2LL	1,489.2141	1,478.599	1,463.120
Change in -2LL from previous model		10.615	15.479
Change in degrees of freedom		1	2
Percentage of Correct Predictions (Cut Value is 0.50)		91.71%	91.67%
N		2,605	2,605
% of Sample		99.5%	99.5%

~p<0.10 * p<0.5 ** p<0.01 *** p<0.001

TABLE C.3

Names, Definitions, and Coding of Variables of Interest Used in Estimating the Effect of Hours of Instruction on Educational and Labor Market Outcomes of Adult Basic Education Programs Funded by the Massachusetts Department of Education between July 1, 1997 and June 30, 1998.

Variable Name (Outcome Variables)	Definition/Description	Coding/Notes
High School Credential		
HSCRED	Dichotomous variable indicating whether an individual received a high school credential (either GED or other) between July 1, 1997 & June 30, 1998.	1=Received HS credential 0=Did not receive HS credential
Job		
O_JOB	Dichotomous variable indicating whether an individual found a job between July 1, 1997 & June 30, 1998.	1=Found a job 0=Did not find a job
Key Question Variable		
LNHOURS	The natural logarithm of hours of instruction received by participant.	LN of hours of instruction.
Individual Background Variables/Controls		
Age		
AGE	Age of participant.	Age in years.
Gender		
FEMALE	Gender of participant	1=Female 0=Male
Race/Ethnicity		
WHITE	A system of dummy variables representing the self- or program-reported race/ethnicity of participant.	1=White 0=Not White
BLACK		1=Black 0=Not Black

HISPANIC		1=Hispanic 0=Not Hispanic
AMERIND		1=American Indian or Alaskan Native 0=Not American Indian or Alaskan Native
ASIAN		1= Asian or Pacific Islander 0=Not Asian/Pac. Islander
Prior Education		
EDUS	Self-reported years of schooling in United States.	Numeric range from 0 to 24.
EDOTH	Self-reported years of schooling outside of United States.	Numeric range from 0 to 24.
Socioeconomic Status		
Public Assistance Status		
PUBASS	A dichotomous variable indicating whether the participant received any type of public assistance.	1=Received public assistance 0=Did not receive public assistance
Labor Force Participation Status		
EMPLOYED	A system of dummy variables indicating the labor force participation status of participants.	1=Employed 0=Not employed
HOMEMAKE		1=Homemaker 0=Not homemaker
RETIRNOL		1=Retired & not looking for work 0=Not "retired & not looking for work"
UNEMPLLO		1=Unemployed & looking for work 0=Not "unemployed and looking for work"
UNEMPLNO		1=Unemployed and not looking for work 0=Not "unemployed and not looking for work"
Entering Ability/Grade Level(ABE)		
GLE 0–GLE 12	A system of dummy variables indicating the entering ability of participants, as measured by the grade level equivalent upon entry into the program.	GLE 0=1=Participant's grade level equivalent on entry was zero. GLE 0=0=Participant's grade level equivalent on entry was not zero. GLE 1...
Entering Language Proficiency/Student Performance Level (ESOL)		
SPL 0–SPL 10	A system of dummy variables indicating the English language proficiency of participants upon entry into the program, as measured by Student Performance Levels.	SPL 0=1=Participant's Student Performance Level on every was zero. SPL 0=0=Participant's Student Performance Level on entry was not zero. SPL 1...
First Language		
L1ENGLIS	A system of dummy variables representing first language of participants.	1=First language is English. 0=First language is not English
L1SPANIS		1=First language is Spanish. 0=First language is not Spanish
L1PORTUG		1=First language is Portuguese. 0=First language is not Portuguese
L1KOREAN		1=First language is Korean. 0=First language is not Korean
L1HAITCR		1=First language is Haitian Creole. 0=First language is not Haitian Creole
L1CANTON		1=First language is Cantonese. 0=First language is not Cantonese.
L1MANDAR		1=First language is Mandarin. 0=First language is not Mandarin.
L1TOISAN		1=First language is Toisanese. 0=First language is not Toisanese.

L1RUSSIA		1=First language is Russian. 0=First language is not Russian.
L1JAPAN		1=First language is Japanese. 0=First language is not Japanese.
L1ARABIC		1= First language is Arabic. 0=First language is not Arabic.
L1FRENCH		1=First language is French. 0=First language is not French.
L1VIETNA		1=First language is Vietnamese. 0=First language is not Vietnamese
L1CAPEV		1=First language is Cape Verdean Creole. 0=First language is not Cape Verdean Creole.
L1CAMBOD		1=First language is Cambodian. 0=First language is not Cambodian.
L1OTHER		1=First language is any another language. 0=First language is not not any other language.
Site Controls		
SITE_1–SITE_230	A system of dummy variables representing instructional sites.	SITE_1=1=Participant participated in services at SITE_1 SITE_1=0=Participant did not participate in services at SITE_1. SITE_2...
CLASS HOURS PER WEEK (CLHRSWK)	A variable representing intensity of instruction.	Hours that a class meets per week.

Two-Way Interaction Terms between Key Question Predictor and Individual and Site Controls

AGELNHRS	AGE*LNHOURS
FEMLNHRS	FEMALE*LNHOURS
BLLNHOURS	BLACK*LNHOURS
HISLNHOURS	HISPANIC*LNHOURS
AMILNHOURS	AMERIND*LNHOURS
ASLNHRS	ASIAN*LNHOURS
EDUSLNHR	EDUS*LNHOURS
EDFOLNHR	EDOTH*LNHOURS
PALNHRS	PUBASS*LNHOURS
HOMEMLNH	HOMEMAKE*LNHOURS
RETIRLNH	RETIRNOL*LNHOURS
UNEMLOLN	UNEMPLLO*LNHOURS
UNEMNLLN	UNEMPLNO*LNHOURS
SPANLNHR	L1SPANIS*LNHOURS
PORTLNHR	L1PORTUG*LNHOURS
KORLNHR	L1KOREAN*LNHOURS
HAITLNHR	L1HAITCR*LNHOURS
CANLNHRS	L1CANTON*LNHOURS
MANLNHRS	L1MANDAR*LNHOURS
TOISLNHR	L1TOISAN*LNHOURS
RUSSLNHR	L1RUSSIA*LNHOURS
JAPLNHR	L1JAPAN*LNHOURS
ARABLNHR	L1ARABIC*LNHOURS
FRENLNHR	L1FRENCH*LNHOURS
VIETLNHR	L1VIETNA*LNHOURS
CAPVLNHR	L1CAPEV*LNHOURS
CAMBLNHR	L1CAMBOD*LNHOURS
OTHLNHR	L1OTHER*LNHOURS
GLE1LNHR	GLE1*LNHOURS
...	...
GLE12LNHR	GLE12*LNHOURS
SPL1LNHR	SPL1*LNHOURS
...	...
SPL10LNHR	SPL10*LNHOURS
CLLNHRS	CLHRSWK*LNHOURS

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